

Tue Apr 04 13:46:12 EDT 2017

Hope.Brian@epamail.epa.gov

FW: State of Wyoming's Petition for Reconsideration of EPA's Final Rule - Interstate Transport for WY

To: CMS.OEX@epamail.epa.gov

DRF

Print for Ryan

From: Robert Leteff [mailto:robert.leteff@wyo.gov]

Sent: Monday, April 03, 2017 5:50 PM

To: Pruitt, Scott <Pruitt.Scott@epa.gov>

Cc: Todd Parfitt <todd.parfitt@wyo.gov>; Colin McKee <colin.mckee@wyo.gov>; Thomas, Deb <thomas.debrah@epa.gov>; Daly, Carl <Daly.Carl@epa.gov>; Nancy Vehr <nancy.vehr1@wyo.gov>; Darla Potter <darla.potter@wyo.gov>; amber.potts@wyo.gov; Elizabeth Morrisseau <elizabeth.morrisseau@wyo.gov>

Subject: State of Wyoming's Petition for Reconsideration of EPA's Final Rule - Interstate Transport for WY

Administrator Pruitt,

Please find attached to this email the State of Wyoming's Petition for Reconsideration of EPA's Final Rule on the Approval and Disapproval and Promulgation of Air Quality Implementation Plans; Interstate Transport for Wyoming. The original petition letter and a copy of the attachments were sent to the William Jefferson Clinton Building via FedEx overnight mail for delivery tomorrow (April 4, 2017). A copy of the letter and the attachments were also sent via FedEx overnight to EPA's Region 8 office in Denver.

Please do not hesitate to contact Wyoming Air Quality Division Administrator Nancy Vehr with any questions, or to direct any legal questions to our council, Elizabeth Morrisseau, at the Wyoming Attorney General's Office.

Sincerely,

Rob Leteff

Wyoming Department of Environmental Quality - Air Quality Division

State Implementation Planning and Rule Development

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Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Matthew H. Mead, Governor

Todd Parfitt, Director

April 4, 2017

Scott Pruitt
Administrator
U.S. Environmental Protection Agency
USEPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N. W.
Washington, DC 20460

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2017 APR -4 PM 2:50
OFFICE OF THE
EXECUTIVE SECRETARY
DEPARTMENT OF ENVIRONMENTAL QUALITY

Submitted via overnight mail and electronic mail

Re: Petition for Reconsideration of Final Rule on the Approval and Disapproval and Promulgation of Air Quality Implementation Plans; Interstate Transport for Wyoming; Docket No. EPA-R08-OAR-2016-0521

Dear Administrator Pruitt:

The Wyoming Department of Environmental Quality, Air Quality Division (WDEQ) hereby petitions the United States Environmental Protection Agency (EPA) to reconsider the Final Rule on the Approval and Disapproval and Promulgation of Air Quality Implementation Plans; Interstate Transport for Wyoming. 82 Fed. Reg. 9142 (Feb. 3, 2017) (Final Rule). Pursuant to Clean Air Act (CAA) Section 307(d)(7)(B), WDEQ requests that EPA convene a proceeding for reconsideration of the Disapproval. That would enable the EPA to hear testimony and receive new information from WDEQ and other parties who submitted comments to the above-referenced docket.

While WDEQ is hopeful that the EPA will grant this request, in consideration of the importance of the Disapproval to the State of Wyoming, WDEQ has contemporaneously filed a petition for review of the Disapproval in the United States Court of Appeals for the Tenth Circuit. Should EPA wish to engage in settlement negotiations, WDEQ is willing to jointly move the Tenth Circuit to stay that litigation for the duration of settlement discussions.

1. Basis for Petition and Procedural Background

In the above-referenced Disapproval, the EPA disapproved several portions of State Implementation Plan (State Plan or SIP) revisions submitted by the State of Wyoming to satisfy the State's CAA 110(a)(2)(D)(i) interstate transport requirements. As part of the requirements, State Plans must contain adequate provisions preventing any emissions activity in one state from emitting pollutants in amounts that will contribute significantly to nonattainment, or interfere with maintenance, of the National Ambient Air Quality Standards (NAAQS) in another state. Wyoming's SIP revisions included an infrastructure SIP for the 2008 ozone NAAQS, submitted

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on February 6, 2014. The EPA did not propose any action on Wyoming's 2008 ozone NAAQS State Plan until November 18, 2016, at which point it proposed a number of actions, including the disapproval of SIP prong 2 of CAA subsection 110(a)(2)(D)(i)(I), which addresses interference with maintenance of the NAAQS in another state.

EPA stated many times that it would not use the Cross-State Air Pollution Rule (CSAPR) in the West as it has done in the Final Rule. In the interim period between submission and disapproval, EPA issued a memorandum intended to provide guidance to states when addressing the CAA's interstate transport "Good Neighbor" provision in their State Plans. In the memo, EPA stated, "CSAPR and its predecessor transport rules, the NO_x SIP Call and CAIR, were designed to address the collective contributions from the 37 states in the Eastern U.S. and were not formally evaluated for applicability to the 11 states in the Western U.S."¹ After EPA issued the guidance, but before taking action on Wyoming's plans, EPA issued a notice of data availability (NODA) to support the upcoming CSAPR update for the 2008 ozone NAAQS. The NODA for the CSAPR update was published for comment on August 4, 2015, well after the Division submitted the 2008 Ozone Infrastructure SIP. Wyoming commented on the NODA² with the understanding that the rule applied only to eastern states and that Wyoming would provide additional comments when the EPA proposed additional SIP requirements for western states.³ When the EPA proposed the CSAPR update on December 3, 2015, the WDEQ commented to that effect once again, because the proposed and final rules both stated that, "the EPA is not addressing interstate emission transport in this action for the 11 western contiguous United States." 81 Fed. Reg. 74523.

WDEQ submitted Wyoming's 2008 ozone NAAQS SIP on February 6, 2014 and EPA had until August 5, 2015 to act on the submission. Throughout the entire process, WDEQ received no indication or communication from EPA's Region 8 office that any deficiencies were present in any of the interstate transport portions of Wyoming's State Plan submissions, and it was not until November 18, 2016, that WDEQ received any official communication that EPA planned to disapprove prong 2 of Wyoming's 2008 ozone SIP. WDEQ requested, and was subsequently denied, an extension so that it could provide EPA with additional information.⁴ WDEQ provided what information it could in a comment letter to the docket by the December 19, 2016, comment period deadline. In this petition, the Division provides new technical information to support its original SIP submission. That new information is central to this rulemaking, and because the EPA did not consider this information when the agency first disapproved Wyoming's SIP submission, the EPA should now convene a proceeding to formally receive and consider this information.

¹ See Information on the Interstate Transport "Good Neighbor" Provision for the 2008 Ozone National Ambient Air Quality Standards (NAAQS) under Clean Air Act (CAA) Section 110(a)(2)(D)(i). January 22, 2015, p. 4

² See Docket No. EPA-HQ-OAR-2015-0500

³ WDEQ was also not able to comment at this time on the contribution threshold. The NODA stated, "In CSAPR, the EPA used a contribution screening threshold of 1 percent of the NAAQS to identify upwind states in the eastern U.S. that may significantly contribute to downwind nonattainment and/or maintenance problems and which warrant further analysis. The EPA will take comment on the appropriate threshold to be applied for purposes of the 2008 ozone NAAQS in the upcoming rulemaking proposal to address interstate ozone transport for that standard. The EPA is not proposing or taking comment on this threshold as part of this NODA." 80 Fed. Reg. 46277.

⁴ See Docket ID No. EPA-R08-OAR-2016-0521

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2. Overview of New Information

In the Final Rule, EPA disapproved prong 2 of Wyoming's plan for the 2008 ozone NAAQS because EPA "linked" Wyoming emissions to projected high ozone levels at a Douglas County, Colorado receptor. EPA applied the "one percent" threshold used in the CSAPR update, which was determined using CAM_x modeling. The model used "Ozone Source Apportionment Technology" (OSAT), "Particulate Source Apportionment Technology" (PSAT) and the "Anthropogenic Precursor Culpability Analysis" (APCA), to determine the contributions from upwind states to predicted ozone levels. The EPA relies on the ability of OSAT/APCA to "tag" ozone precursor emissions from Wyoming and to distinguish precisely how much of the predicted ozone at downwind receptors is attributable to Wyoming.

In recent conversations with the EPA staff that conducted the CSAPR transport modeling, WDEQ inquired about the reliability of the predicted contributions, and if the predicted contributions could be verified. EPA confirmed that the certainty of the source apportionment tools cannot be tested, and that back-trajectories are used to determine if the modeled contributions from an upwind state are plausible. This is very concerning for Wyoming, because while transport patterns can reveal if wind flows would even allow precursor emissions from a particular area to reach a given receptor, it does not prove that OSAT/APCA can predict ozone contributions with any degree of accuracy. Moreover, one of the source apportionment tools in CAM_x, PSAT, was recently found to produce inconsistent results within the model, which called into question previous modeling results that were used for PM_{2.5} and regional haze SIPs, as well as the CSAPR. According to the model developer, this inconsistency with PSAT has been corrected within the model, but it demonstrates the unproven nature of the source apportionment tools. Wyoming has serious concerns that EPA is using an inaccurate assessment tool to predict very small levels of ozone that in turn "link" Wyoming emissions to receptors in other states.

Knowing that the primary source of certainty testing for the source apportionment tools is through back-trajectory analysis, Wyoming conducted its own analysis of back-trajectories for the 10 days with the highest monitored ozone values at the Douglas County, Colorado monitor (referred to in the disapproval as a receptor) to which Wyoming emissions were "linked" in the base 2011 CSAPR modeling. Wyoming's objective was to compare the transport patterns on those 10 days to the model-predicted "contributions" from Wyoming to determine if the model results were reasonable. Only one of the 10 back-trajectories showed that flows for the previous 24 hours originated from the direction of Wyoming (see Attachment A). For the other nine back-trajectories, flows originated from southern Colorado, western Colorado/eastern Utah, states southwest of Colorado, and the Denver Front Range. WDEQ received additional data from EPA's Region 8 office on March 27, 2017 and conducted back-trajectory analyses on the four additional days for which it did not already conduct analyses (See Attachment A Supplements 1 and 2). In all, WDEQ's back-trajectory analyses show flows from only three of the eight modeled days (6/22, 7/5, and 8/10) and only one of the highest monitored days in 2011 (6/22).

WDEQ recently became aware of source apportionment modeling conducted by Ramboll Environ and Alpine Geophysics on behalf of the Denver Regional Air Quality Council (RAQC) and the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control

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Division (APCD) (Attachment B).⁵ The modeling was conducted using the same CAM_x software used in EPA's CSAPR modeling with data from the Intermountain West Data Warehouse. The analysis showed that for the same site, on the same day, total 2017 MDA8 O₃ (highest daily maximum 8 hour average for ozone) was different between the types of analyses (Local Source Analysis versus Transport Analysis) likely due to the differences in grid resolution. This discrepancy alone is reason enough for EPA to reconsider Wyoming's 2008 ozone SIP submission.

Additional information has become available since the CSAPR Update and the disapproval of Wyoming's ozone SIP for which the CAM_x modeling does not account. The peer-reviewed journal *Atmospheric Chemistry and Physics* published an article dated March 1, 2017, which observed that ozone concentrations at some sites in the western U.S. are increasing despite stringent emissions controls.⁶ The article concludes that an increase of Asian anthropogenic emissions has increased by 1–2 ppb yr⁻¹ since 1990 and is a major driver of both spring and summer background ozone in the western U.S., contributing up to 65% of springtime background ozone. The article specifically references the Denver metropolitan area and notes that “the 4th highest MDA8 O₃ in the Denver metropolitan area shows little change over the past decades, despite significant reductions in NO_x...and CO emissions.”⁷

EPA has also taken action on a petition, dated December 9, 2013, since its disapproval of prong 2 of Wyoming's 2008 ozone SIP. In the action, EPA stated that, “[o]zone levels across the nation are expected to further decline over the next several years due to emissions controls already in place. The EPA's emissions projections in support of the 2015 ozone NAAQS modeling show declining emissions of NO_x and VOCs between 2017 and 2025.” 82 Fed. Reg. 6520. In light of this information, it seems premature for the EPA to disapprove prong 2 of Wyoming's State Plan for ozone.

WDEQ also submitted numerous exceptional event packages to EPA between 2011 and 2014, and EPA responded in a letter received by WDEQ on April 28, 2016 that:

A preliminary review of the demonstrations submitted indicates that the flagged PM and ozone data may have been influenced by exceptional events; however, at this time the EPA will not take action on WDEQ's request for concurrence on the referenced data flags. The data are not anticipated to be involved in any pending regulatory decision by the EPA, therefore, the EPA is not making a concurrence decision on the demonstrations submitted. *If at some point in the future the flagged data would be included in an attainment demonstration or involved in other regulatory decisions, the EPA would then undertake a full review of the submitted demonstrations to allow a concurrence decision at that time.* (emphasis added).

Yet all of those flagged data were used in the EPA's regulatory decision to disapprove Wyoming's ozone transport State Plan submission. 82 Fed. Reg. 9151. WDEQ asks that EPA

⁵ Denver Metro/North Front Range 2017 Ozone Source Apportionment Modeling. Retrieved from <http://vibe.cira.colostate.edu/wiki/9132/>. February 21, 2017 and March 16, 2017.

⁶ M. Lin et al. “US surface ozone trends and extremes from 1980 to 2014” *Atmospheric Chemistry and Physics*. March 1, 2017. p. 2964

⁷ Ibid. p. 2960

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concur on Wyoming's decisions to flag the data as influenced by exceptional events, remove the flagged data, and then use the new data set to reconsider the Final Rule. WDEQ also requests that EPA review Colorado receptor data for any possible concurrent exceptional events, such as wildfires, on certain dates and WDEQ would also like an opportunity to review that data. Even though a state chooses not to submit an exceptional event package it does not mean data was not impacted by an exceptional event or events. Any day impacted by an exceptional event should be flagged as such whether or not that event was included in an official submission.

3. Docket Comments Supported Allowing Wyoming to Submit More Information

WDEQ's request for additional time to submit more information was not unreasonable. Every other comment to the docket supporting Wyoming's underlying State Plan submission requested that the EPA grant WDEQ additional time to submit additional information. (See Attachment C). The EPA chose not to give WDEQ more time based on a then-unsigned consent decree with the Sierra Club. That decision flies in the face of cooperative federalism because, in essence, the EPA determined that a citizen group's convenience during litigation was more important than a sovereign state's right to fully participate in its own State Plan development process.

I appreciate the time that you have taken to consider WDEQ's request. Although WDEQ is hopeful that the EPA will convene a proceeding for reconsideration, WDEQ will also be filing a petition for review in the 10th Circuit Court of Appeals today. Please feel free to contact me with any questions at (307) 777-3746. Please direct questions that are legal in nature to my counsel at the Wyoming Attorney General's Office, Elizabeth Morrisseau, at (307) 777-6199.

Sincerely,



Nancy E. Vehr
Air Quality Division Administrator

CC: Todd Parfitt, Wyoming Department of Environmental Quality, Director
Colin McKee, Wyoming Governor's Office, Policy Advisor
Deb Thomas, EPA Region 8, Acting Administrator
Carl Daly, EPA Region 8, Air Program Director

Attachment A

HYSPLIT Analyses of Parcel Trajectory for High Ozone Days in 2011 at the Douglas County, CO Monitoring Station

Wyoming Department of Environmental Quality
Air Quality Division
March 7, 2017

I. Introduction

On February 3, 2017, the Environmental Protection Agency (EPA) published a final rule, "Approval and Disapproval of Air Quality Implementation Plans; Interstate Transport for Wyoming," in the Federal Register (FR Vol. 82, No. 22). In this rule, among other actions, the EPA disapproved the portion of the State of Wyoming's State Implementation Plan (SIP) addressing prong 2 of the interstate transport requirements for the 2008 ozone National Ambient Air Quality Standards (NAAQS). This disapproval hinged on a finding in an EPA modeled ozone transport assessment which found that Wyoming is projected to contribute 1.18 ppb of ozone to a maintenance receptor in the Denver, Colorado area in 2017.

This analysis serves as a supplement to the State of Wyoming's SIP submittal, providing additional evidence to support Wyoming's original claim that Wyoming is not expected to significantly contribute to Colorado's attainment of the 2008 NAAQS. The analysis includes additional information to support Wyoming's stance, including HYSPLIT and smoke analyses, as well as referencing modeling results which contradict the EPA's findings.

The maintenance monitor identified by the EPA as being influenced by emissions from Wyoming in 2017 is identified in Table 1, below.

Site Name	Douglas County
AQS Site ID	08-035-0004
Monitor Type	SLAMS
PQAO	CDPHE
Latitude	39.554466
Longitude	-105.070358
Attainment Status	Nonattainment

Table 1. Site Details

The EPA's modeling analysis projected the maintenance status of monitors based on the 10 days with the highest maximum 8-hour average ozone values in the base year of 2011. The top 10 days for the Douglas County monitor and the associated maximum 8-hour average ozone value are identified in Table 2, below.

Wyoming Department of Environmental Quality
Air Quality Division

2011 HYSPLIT Analysis
March 2017

Date	Starting Hour	Max 8-Hour Ozone Value (ppm)
June 24, 2011	12:00	0.099
June 7, 2011	10:00	0.084*
August 13, 2011	12:00	0.084
August 12, 2011	10:00	0.082
August 20, 2011	11:00	0.081
August 27, 2011	10:00	0.08
July 18, 2011	13:00	0.079
July 30, 2011	10:00	0.078
June 22, 2011	11:00	0.076
July 9, 2011	09:00	0.075

Table 2. Top 10 2011 Max 8-hr Ozone Days

*This value was flagged in AQS by the agency.

In analyzing these days it was noted that the June 7, 2011 value was identified as being associated with an exceptional event by the monitoring agency, the Colorado Department of Public Health and Environment (CDPHE). The comment provided in AQS about the June 7, 2011 event (from the hours of 07:00-21:00) is as follows:

"The passage of a strong low pressure system created a fold in the tropopause. Associated stratospheric air in the troposphere and deep mixing resulted in stratospheric ozone being pulled down to ground level along the Colorado Front Range and mountain regions. The affected hourly concentrations are those flagged as "ro" in the AQS database. This meteorological Condition is not controllable."

II. HYSPLIT and Smoke Impact Analysis

HYSPLIT (Hybrid Single Particle Lagrangian Integrated Trajectory) Model Analyses generate wind trajectories up to forty-eight (48) hours prior to (backwards trajectory) or after (forwards trajectory) a chosen start date of interest. A backwards trajectory is a valuable indicator of what could affect a stationary location such as a city or monitoring station. A forwards trajectory is beneficial to view possible dispersion from an emission source.

In order to assess the potential impacts of Wyoming emissions on the Douglas County monitor, backward trajectories were run for each of the 10 highest ozone days in 2011. Trajectory data in this analysis were sourced from the National Oceanic and Atmospheric Administration's (NOAA) Air Resource Laboratory (ARL) website, here: http://www.arl.noaa.gov/HYSPLIT_info.php¹. The National Centers for Environmental Protection's (NCEP) Global Data Assimilation System (GDAS) meteorological data set

¹ Stein, A.F., Draxler, R.R., Rolph, G.D., Stunder, B.J.B., Cohen, M.D., and Ngan, F., (2015). NOAA's HYSPLIT atmospheric transport and dispersion modeling system, Bull. Amer. Meteor. Soc., 96, 2059-2077, <http://dx.doi.org/10.1175/BAMS-D-14-00110.1>

Wyoming Department of Environmental Quality
Air Quality Division

2011 HYSPLIT Analysis
March 2017

using a 0.5 degree resolution was used for these analyses. The model vertical velocity option was selected for vertical motion. These modeled trajectories are displayed in Figures 1-10, below.

Fire and smoke impacts were also assessed for the 10 highest ozone days in 2011. Fire and smoke data were obtained from NOAA's ARL website, here: http://www.ready.noaa.gov/smoke_verifyhms.php². Where smoke impacts were present in the map domain on a given day, those layers were included in Figures 1-10. Fire and smoke data displayed are for the high ozone day, rather than the day before.

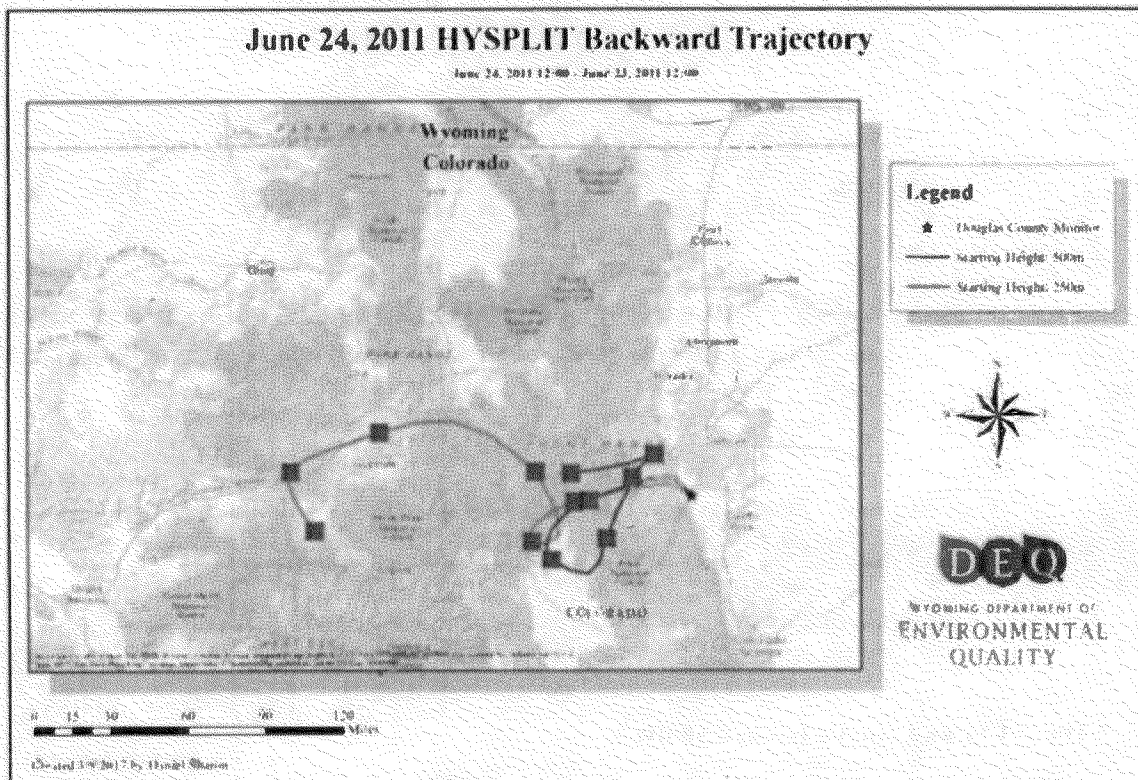


Figure 1. HYSPLIT Run for June 24, 2011

² NOAA. 2017. Meteorological archive data spanning June 2011 to August 2011. Downloaded from ARL website, <http://www.arl.noaa.gov/index.php>. Accessed March 2017.

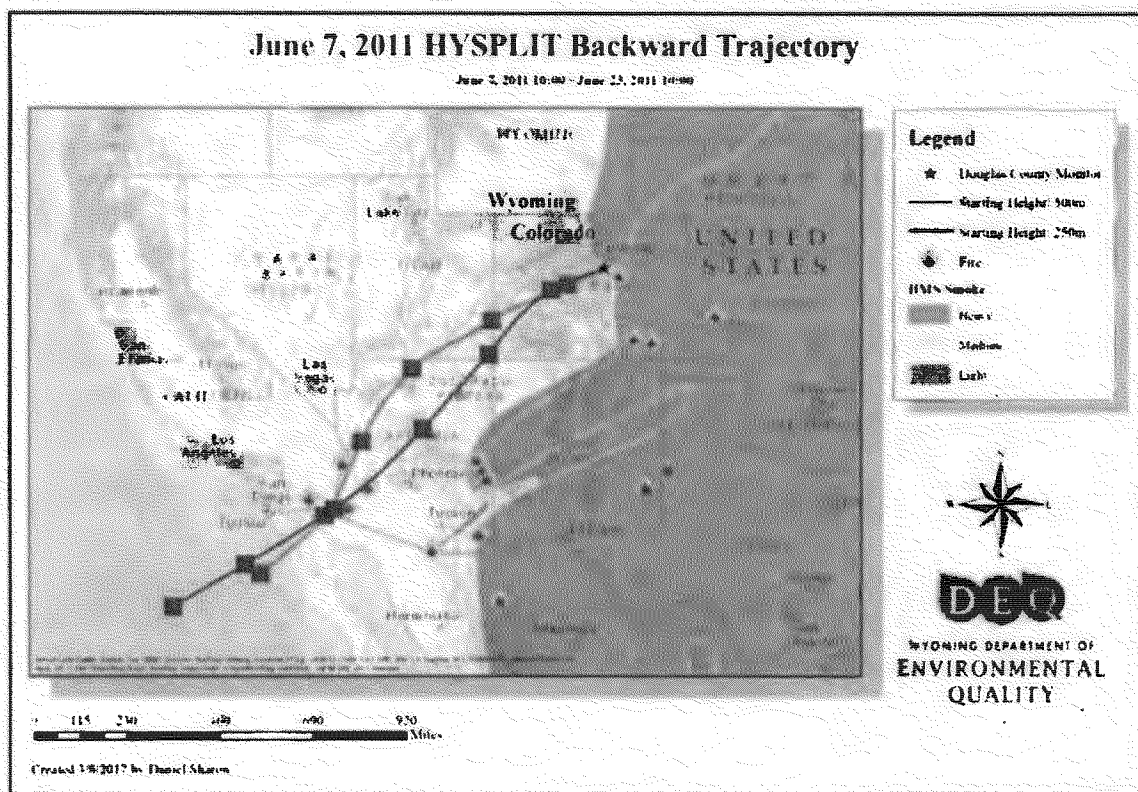


Figure 2. HYSPLIT Run for June 7, 2011

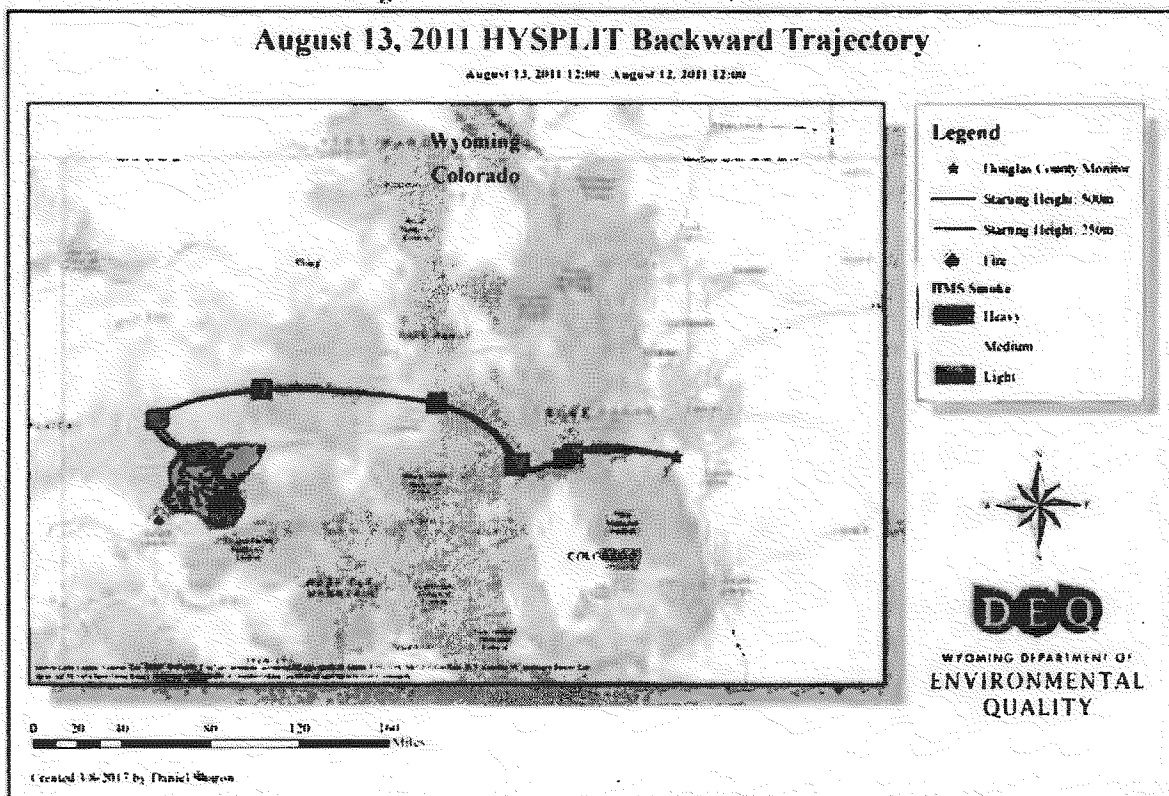


Figure 3. HYSPLIT Run for August 13, 2011

Wyoming Department of Environmental Quality
Air Quality Division

2011 HYSPLIT Analysis
March 2017

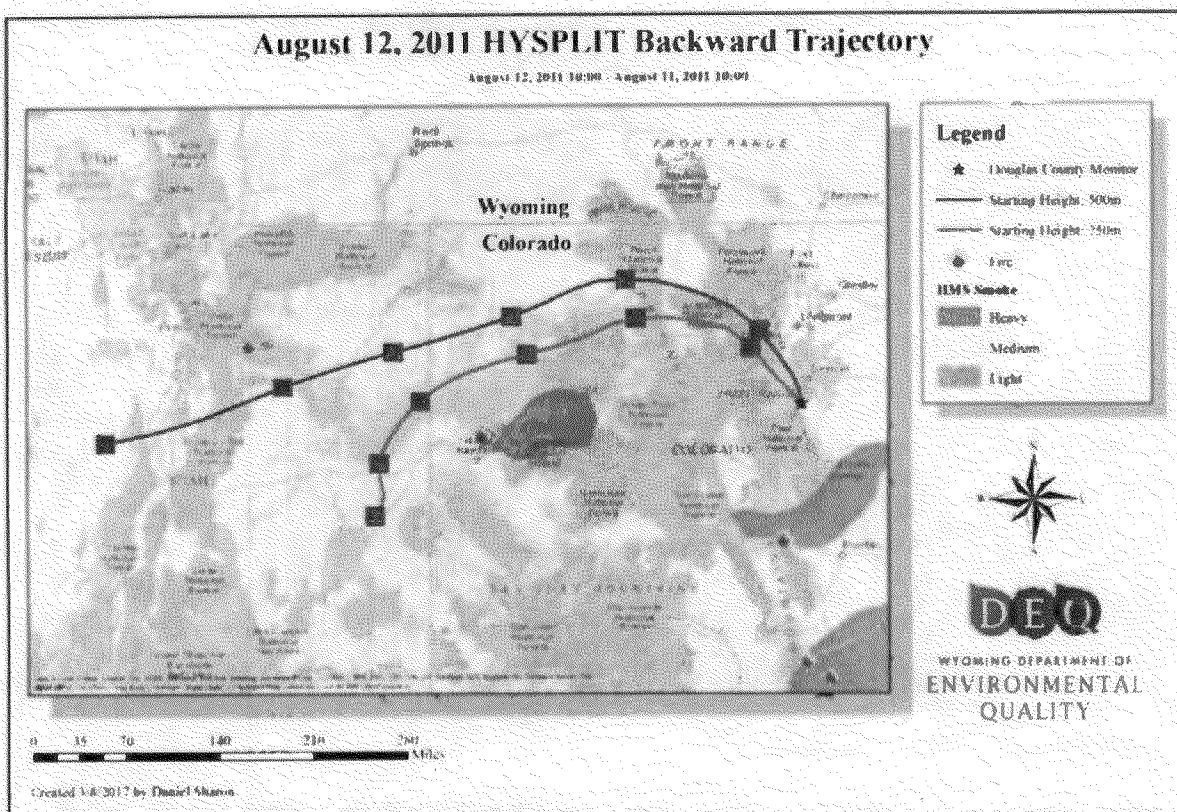


Figure 4. HYSPLIT Run for August 12, 2011

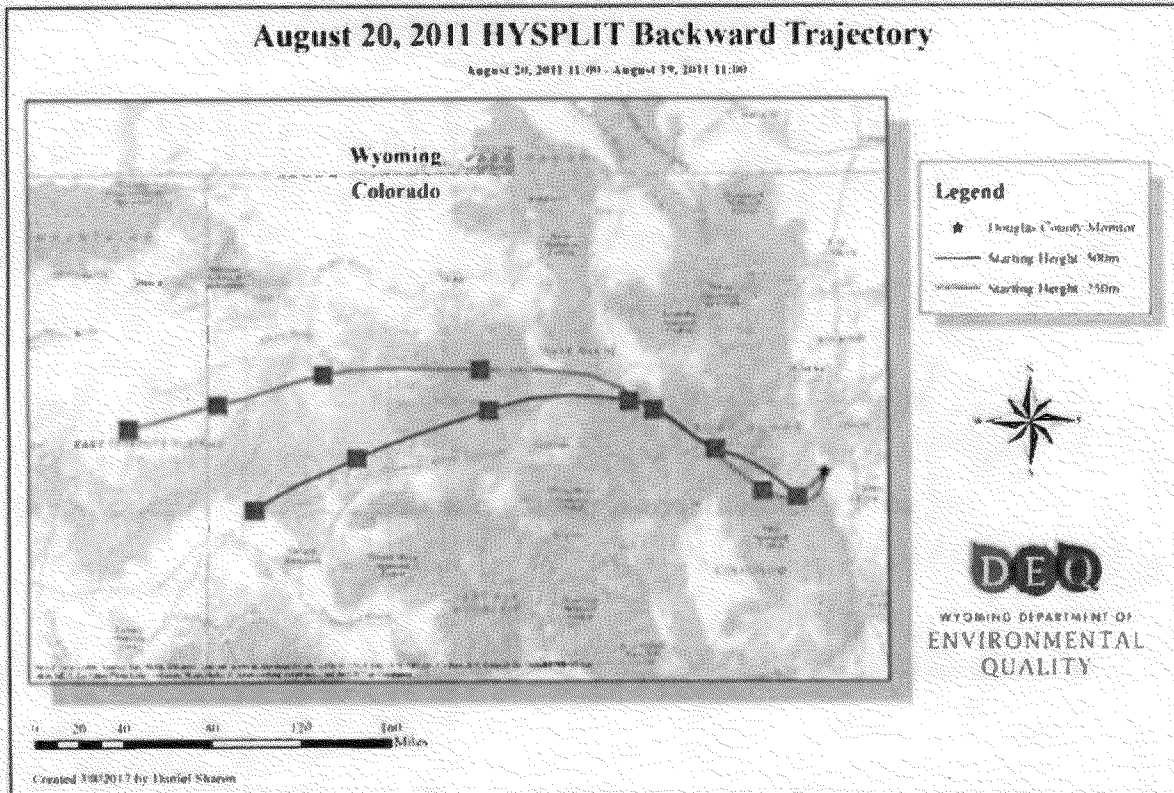


Figure 5. HYSPLIT Run for August 20, 2011

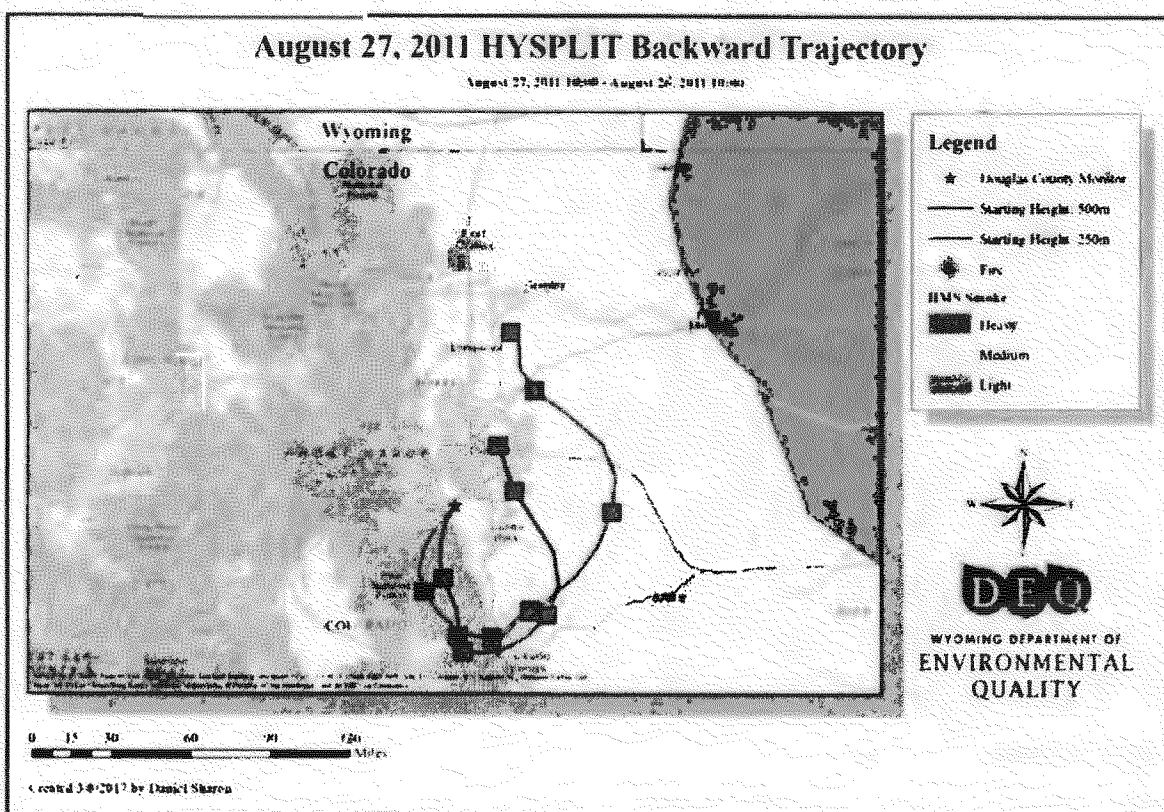


Figure 6. HYSPLIT Run for August 27, 2011

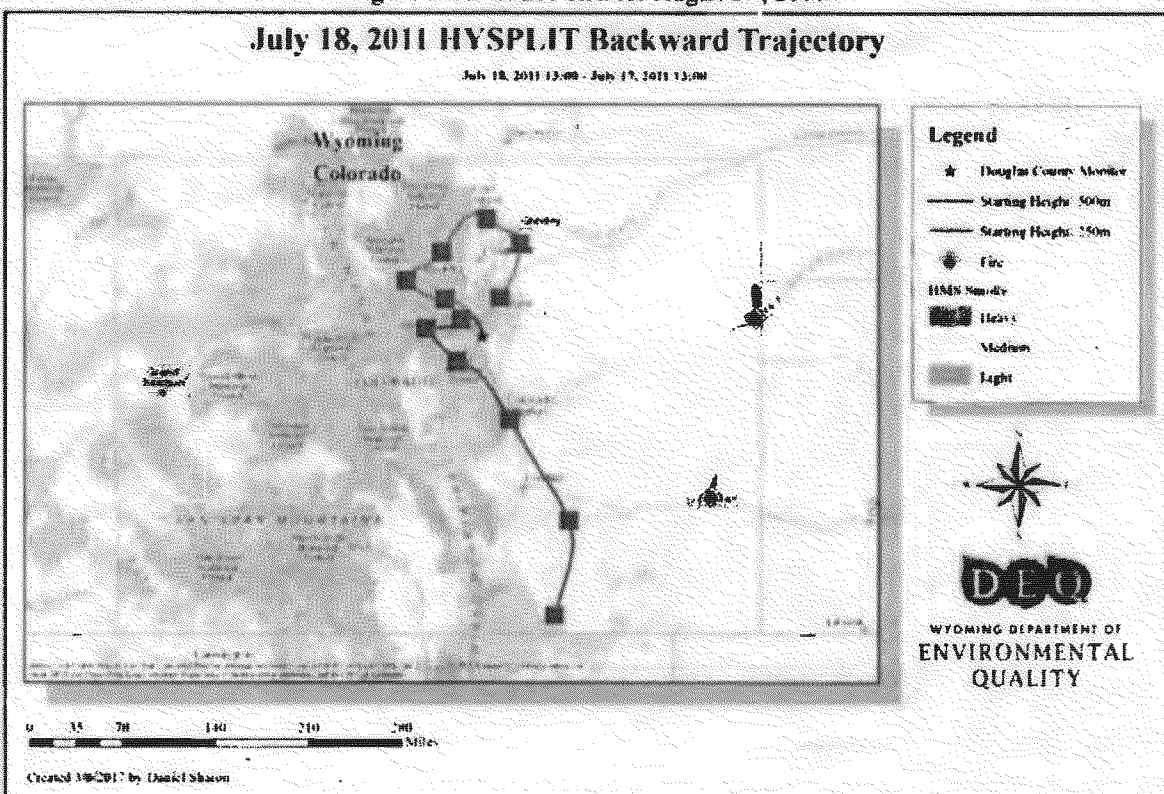


Figure 7. HYSPLIT Run for July 18, 2011

Wyoming Department of Environmental Quality
Air Quality Division

2011 HYSPLIT Analysis
March 2017

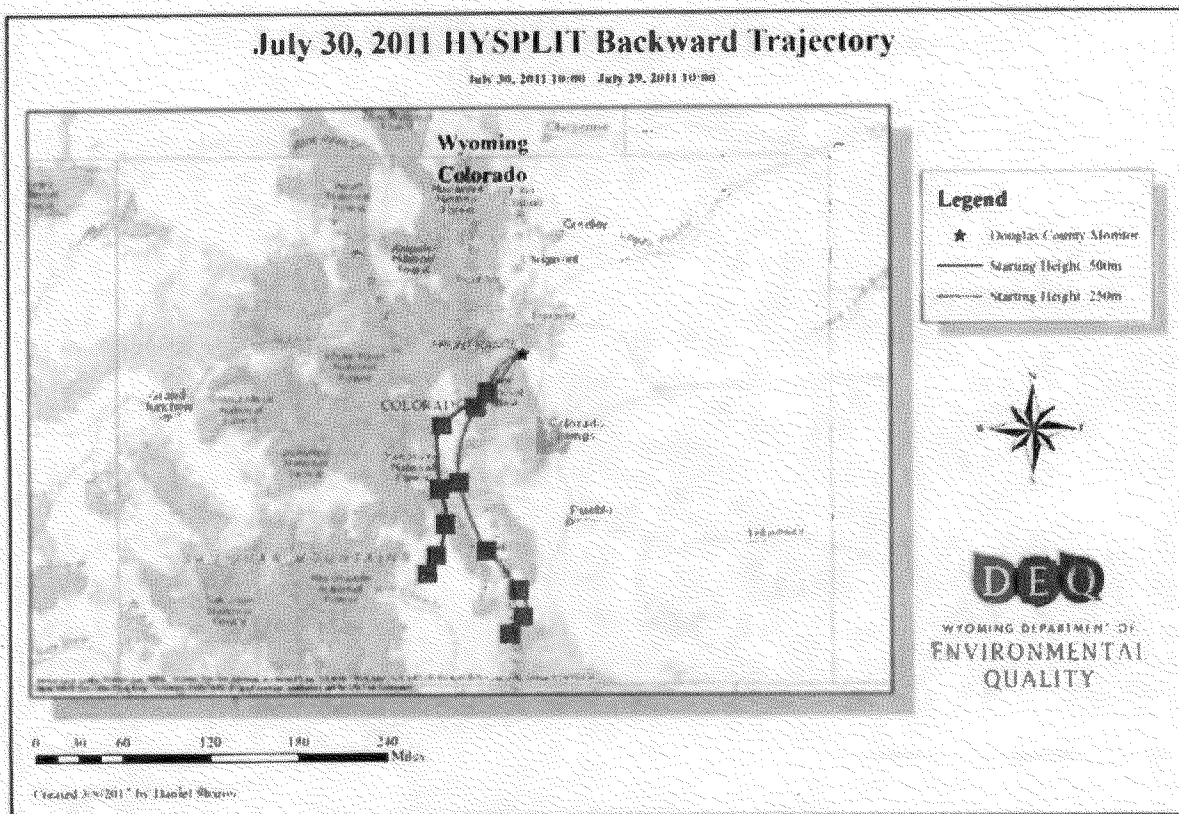


Figure 8. HYSPLIT Run for July 30, 2011

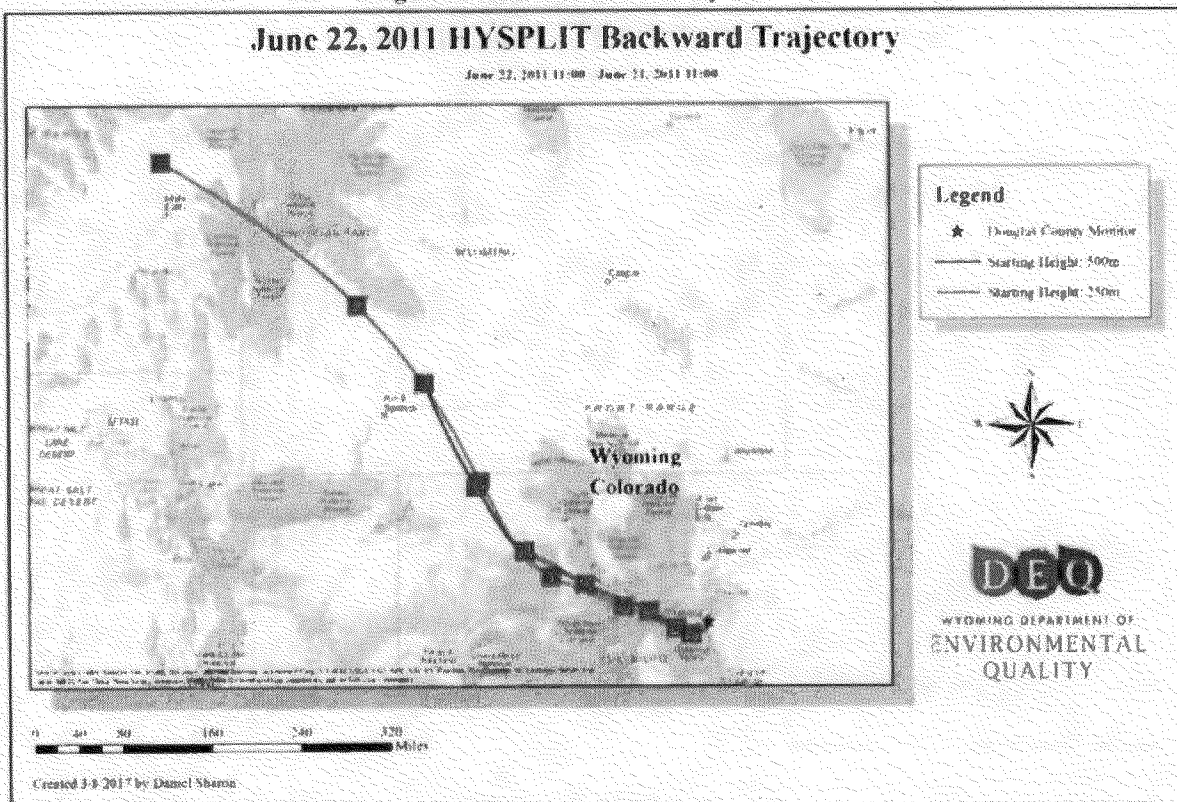


Figure 9. HYSPLIT Run for June 22, 2011

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Air Quality Division

2011 HYSPLIT Analysis
March 2017

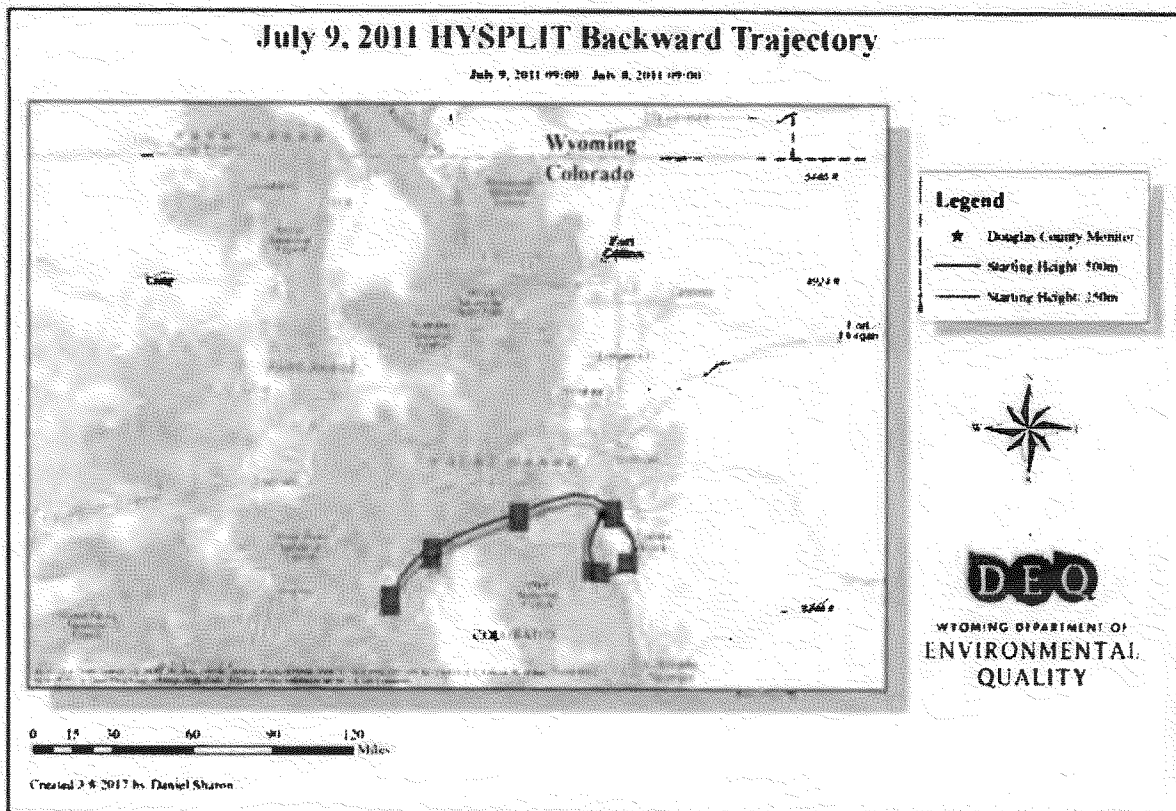


Figure 10. HYSPLIT Run for July 9, 2011

Attachment A Supplement 1

Supplement to HYSPLIT Analysis of Parcel Trajectory for High Ozone Days in 2011 at the Douglas County, CO Monitoring Station

Wyoming Department of Environmental Quality
Air Quality Division
March 30, 2017

In addition to the HYSPLIT analyses performed to characterize parcel movement on monitored high ozone days in 2011 at the Douglas County, Colorado monitor, the Air Quality Division (AQD) performed additional HYSPLIT runs for the modeled high days that were used in the Environmental Protection Agency's (EPA) determination of Wyoming's contributions in 2017. Four (4) of the days included in the AQD's March 7, 2017 analysis were among the eight (8) days used by the EPA to calculate ozone contribution from Wyoming to the Douglas County receptor. These four days are August 20, August 13, August 12, and June 22.

The additional four (4) days included in the EPA calculations are July 4, July 5, June 9, and August 10. HYSPLIT analyses for these days in 2011 are presented in Figures 1-4, below. As with the AQD's March 7, 2017 analysis, trajectory data were sourced from the National Oceanic and Atmospheric Administration's (NOAA) Air Resource Laboratory (ARL) website, here: http://www.arl.noaa.gov/HYSPLIT_info.php¹. The National Centers for Environmental Protection's (NCEP) Global Data Assimilation System (GDAS) meteorological data set using a 0.5 degree resolution was used for these analyses. The model vertical velocity option was selected for vertical motion.

Fire and smoke impacts were also assessed for the additional four modeled high ozone days. Fire and smoke data were obtained from NOAA's ARL website, here: http://www.ready.noaa.gov/smoke_verifvhlms.php². Where smoke impacts were present in the map domain on a given day, those layers were included in Figures 1-4. Fire and smoke data displayed are for the high modeled ozone day, rather than the day before.

Because no start hour data were provided by the EPA for their modeled MDA8 concentrations on the high modeled ozone days, all trajectories were run backwards from 11:00 AM on the day in question. 11:00 is the average of the start times for the high MDA8 concentrations on the top 10 high monitored ozone days in 2011.

¹ Stein, A.F., Draxler, R.R., Rolph, G.D., Stunder, B.J.B., Cohen, M.D., and Ngan, F., (2015). NOAA's HYSPLIT atmospheric transport and dispersion modeling system. Bull. Amer. Meteor. Soc., **96**, 2059-2077, <http://dx.doi.org/10.1172/BAMS-D-14-00110.1>

² NOAA. 2017. Meteorological archive data spanning June 2011 to August 2011. Downloaded from ARL website, <http://www.arl.noaa.gov/index.php>. Accessed March 2017.

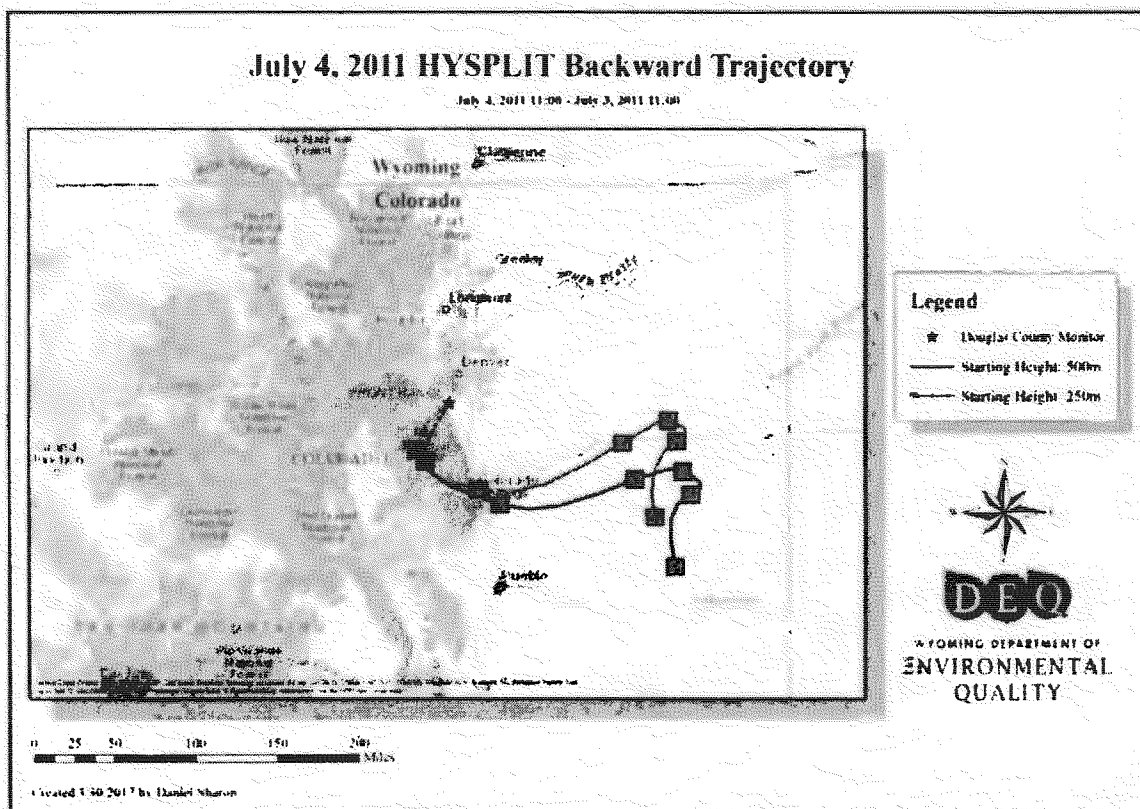


Figure 1. HYSPLIT Run for July 4, 2011

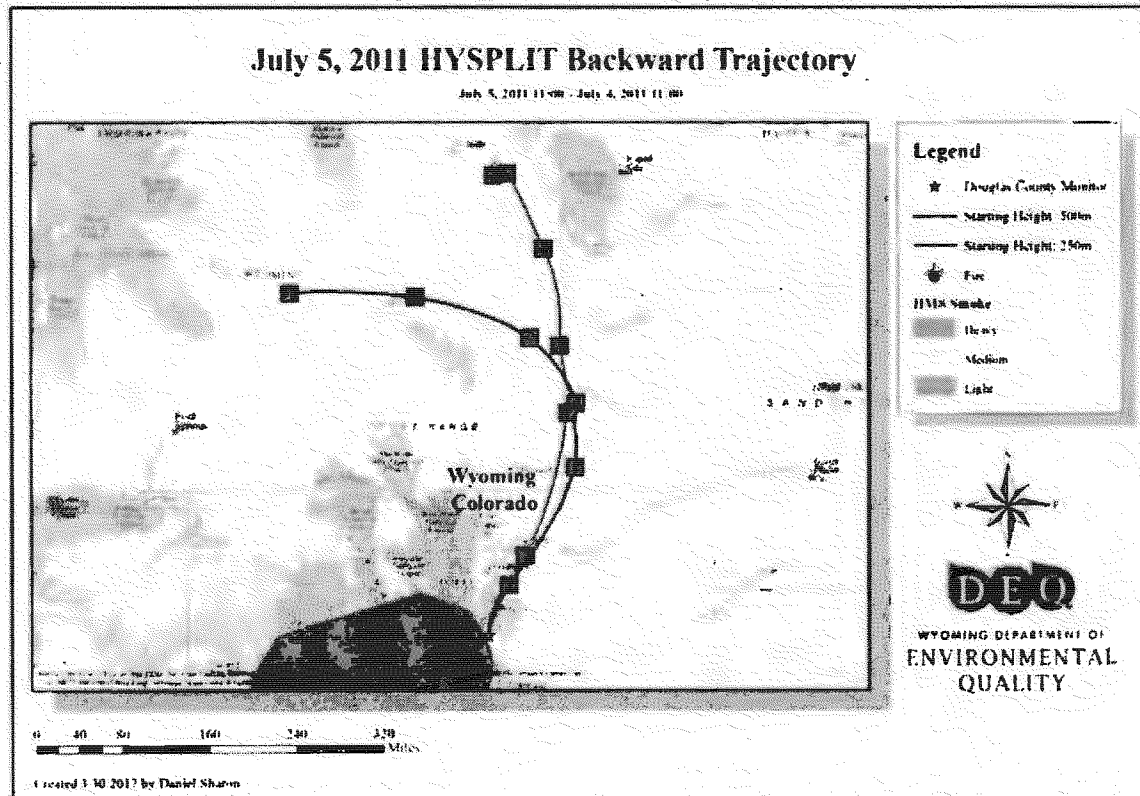


Figure 2. HYSPLIT Run for July 5, 2011

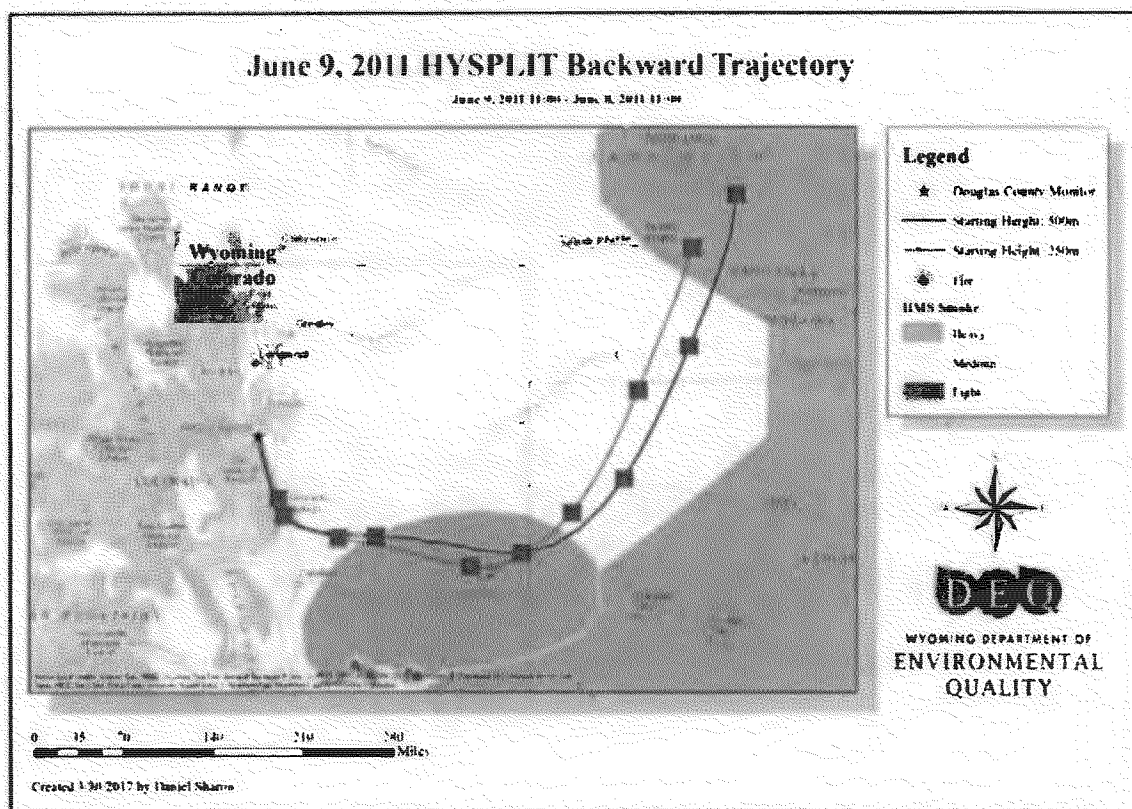


Figure 3. HYSPLIT Run for June 9, 2011

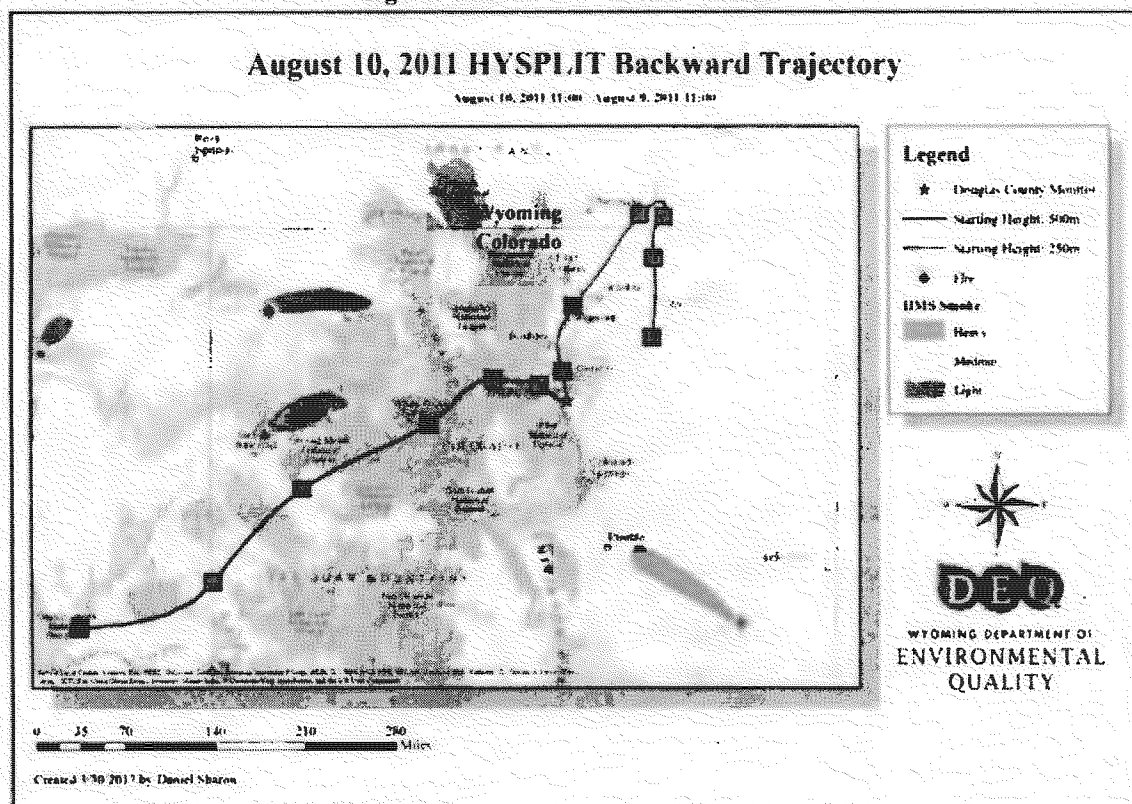


Figure 4. HYSPLIT Run for August 10, 2011

Wyoming Department of Environmental Quality
Air Quality Division

Supplement to 2011 HYSPLIT Analysis
March 2017

As can be seen in Figures 1-4 above, the only high modeled ozone days where trajectories passed through Wyoming were July 5, 2011 and August 10, 2011. Figure 2, showing the July 5, 2011 trajectory, also shows significant smoke impacts directly adjacent to the Douglas County monitor which would be expected to have a greater impact on the ozone value at this site than emissions from Wyoming and likely had a confounding effect on model performance. Figure 4 shows that on August 10, 2011 only the 250 meter trajectory passed through a small section of southeast Wyoming.

Attachment A Supplement 2

Calculation of 2017 Contribution from Wyoming to Denver

EPA performed nationwide air quality modeling to support the CSAPR Update which was finalized on September 7, 2016. As described in the Air Quality Modeling Technical Support Document (AQMTSD) for this rule, air quality modeling was used to identify monitoring sites that are projected to be nonattainment and/or maintenance receptors for the 2008 NAAQS in 2017. The modeling was also used, in part, to quantify the contributions from projected 2017 anthropogenic emissions in each state, individually, to 2017 average design values at each receptor site. The modeling-based daily 8-hour contributions were used to calculate an average contribution metric, as documented in the AQMTSD. The results of this modeling identified that projected 2017 anthropogenic emissions in Wyoming contribute 1.18 ppb to the 2017 average design value at a maintenance receptor site in Douglas County, Colorado.

The AQMTSD, Table 4-1 provides an example of the calculation of the average contribution metric. Below we provide a table containing the data used to calculate this metric for Wyoming's contribution to the Douglas County receptor. The table includes (1) the 2017 model-predicted maximum daily average 8-hour (MDA8) ozone concentrations for this site on those days with modeled ozone exceedances in 2017 (i.e., MDA8 values ≥ 76 ppb), (2) the daily 8-hour average contributions from Wyoming corresponding to the time of the MDA8 concentration, and (3) the "pseudo" concentration which is the difference between modeled MDA8 concentration and the contribution from Wyoming. The data in the table are rank-ordered based on the MDA8 ozone concentrations on these days. The 2017 average design value for the Douglas County site is 75.5 ppb. Using the data in table below, the Relative Contribution Factor (RCF) for Wyoming to this site is:

$$(79.700 - 78.446) / 79.700 = 0.01573$$

The contribution metric value for Wyoming is calculated as:

$$75.5 \times 0.01573 = 1.1876 \text{ which is truncated to } 1.18 \text{ ppb}$$

Data for Calculating Ozone Contribution from Wyoming to the
Douglas County Receptor (units are ppb).

Month	Day	2017 Predicted MDA8 O3 (ppb)	Contributions from WY (ppb)	"Pseudo" 8-Hr O3 for WY (ppb)
8	20	83.729	0.695	83.034
8	13	82.590	1.732	80.858
7	4	80.980	0.651	80.329
7	5	79.785	3.949	75.836
6	9	78.356	0.136	78.220
8	10	78.015	0.242	77.773
8	12	77.522	1.065	76.457
6	22	76.630	1.565	75.065
Multi-Day Average =>		79.700	-	78.446
2017 Average Design Value is 75.5 ppb		RCF =>	0.01573	-
		Contribution =>	1.1876	-
		Truncated Contribution =>	1.18	-

Attachment B

Denver Metro/North Front Range 2017 Ozone Source Apportionment Modeling

Abstract

The Denver Metro/North Front Range Moderate Area Ozone State Implementation Plan (SIP) included 2017 ozone attainment demonstration modeling for the 2008 0.075 ppm ozone NAAQS. The attainment demonstration modeling used a 2011 CAMx modeling platform that was based on the Western Air Quality Study (WAQS) CAMx 2011b database available through the Intermountain West Data Warehouse (IWDW (<http://views.cira.colostate.edu/tsdw/>)). Additional modeling was performed to look ahead to the new 2015 0.070 ppm ozone NAAQS. Two types of 2017 ozone source apportionment modeling were conducted: (1) Local Source Analysis that analyzed ozone contributions from different source sectors within Colorado; and (2) Transport Analysis that analyzed ozone contributions due to emissions from western states. The ozone source apportionment (SA) modeling results can be visualized using a web-based SA Vis Tool that is discussed in this wiki. The Denver ozone SIP modeling was conducted by Ramboll Environ (<http://www.ramboll-environ.com/>) and Alpine Geophysics (<http://www.alpinegeophysics.com/>) under contract to the Denver Regional Air Quality Council (RAQC (<http://raqc.org/>)) along with the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD (<https://www.colorado.gov/pacific/cdphe/apcd>)).

Local Source Analysis SA Vis Tool (http://vibe.cira.colostate.edu/WAQS_SA_CO)

Transport Analysis SA Vis Tool (http://vibe.cira.colostate.edu/WAQS_SA_DENVER)

Overview

The Denver 2017 ozone source apportionment (SA) modeling was conducted using the Comprehensive Air-quality Model with extensions (CAMx (<http://www.camx.com/>)) photochemical grid model (PGM) Anthropogenic Precursor Culpability Assessment (APCA) version of the Ozone Source Apportionment Technology (OSAT). Two types of Denver 2017 ozone SA modeling were conducted following the procedures in the March 21, 2016 SA Modeling Plan ([/wiki/Attachments/Source Apportionment/Denver/Denver_SA_Plan_2016-03-21.pdf](/wiki/Attachments/Source%20Apportionment/Denver/Denver_SA_Plan_2016-03-21.pdf)): (1) Local Source Analysis; and (2) Transport Analysis. As described in more detail below, the Local Source Analysis ozone SA modeling calculated the 2017 ozone contributions resulting from different source sectors in Colorado. The Transport Analysis calculated ozone contributions due to anthropogenic emissions from western states as well as eastern U.S., Mexico, Canada, offshore and Boundary Conditions (BCs) around the CONUS modeling domain (i.e., contributions due to international transport and stratospheric ozone). The Denver ozone modeling used three domains as shown in Figure 1: (i) a Continental U.S. (CONUS) domain at 36 km grid resolution; (ii) a western U.S. (WESTUS) domain at 12 km grid resolution; and (iii) a Colorado domain at 4 km grid resolution. The Local Source Analysis ozone SA modeling was run on just the Colorado 4 km domain using boundary conditions (BCs) extracted from the 2017 CAMx 36/12 km CONUS/WESTUS domain simulation. The Transport Analysis ozone SA run was run on the 36/12 km CONUS/WESTUS domains using BCs for the CONUS domain from the MOZART (<https://www2.acom.ucar.edu/gcm/mozart>) Global Chemistry Model (GCM). A description of the CAMx OSAT/APCA ozone source apportionment tool is provided in Chapter 7 of the CAMx User's Guide (http://www.camx.com/files/camxusersguide_v6-30.pdf).

The Denver 2011 CAMx modeling platform was based on the CAMx 2011b 36/12/4 km modeling platform developed by the Western Air Quality Study (WAQS) and available on the Intermountain West Data Warehouse (IWDW (<http://views.cira.colostate.edu/tsdw/>)). Details on the development of the WAQS CAMx 2011b modeling platform, including meteorological modeling and model performance evaluation (MPE), emissions modeling and the CAMx base case modeling, are available in reports (http://views.cira.colostate.edu/tsdw/Documents/?file=WAQS_Base11b_MPE_Draft_21Jan2016.doc) on the IWDW. The Denver ozone modeling adopted the WAQS 36 km CONUS and 12 km WESTUS domains, but redefined the 4 km domain to focus on Colorado (Figures 1 and 2). The meteorological inputs for the Denver CAMx database used the same WAQS WRF 2011 36/12/4 km simulation output, but they were re-processed using the latest WRF-CAMx processor (WRF-CAMx v4.4 released April 2016). For the Denver CAMx 36/12 km domains, emissions from version 2 of the 2011 National Emissions Inventory (NEI (<https://www.epa.gov/air-emissions-inventories/2011-national-emissions-inventory-nei-data>)) were used. For the 4 km Colorado domain, emissions were provided by the CDPHE/APCD. On-road mobile source emissions were based on the MOVES2014 on-road mobile source emissions model. For the Denver ozone Nonattainment Area (NAA), detailed link-based activity data were used based on Traffic Demand Model (TDM) output. More details on the Denver ozone SIP modeling database are provided in the Modeling Protocol ([/wiki/Attachments/Source Apportionment/Denver/Model_Protocol_Denver_RAQC_2017SIPv4.pdf](/wiki/Attachments/Source%20Apportionment/Denver/Model_Protocol_Denver_RAQC_2017SIPv4.pdf)), 2011 base case and model performance evaluation report ([/wiki/Attachments/Source Apportionment/Denver/Denver_2017SIP_MPE_Finalv1.pdf](/wiki/Attachments/Source%20Apportionment/Denver/Denver_2017SIP_MPE_Finalv1.pdf)) and 2017 ozone projection modeling report ([/wiki/Attachments/Source Apportionment/Denver/Denver_2017SIP_2017AttainDemo_Finalv1.pdf](/wiki/Attachments/Source%20Apportionment/Denver/Denver_2017SIP_2017AttainDemo_Finalv1.pdf)).

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Denver Metro/North Front Range 2017 Ozone Source Apportionment Modeling

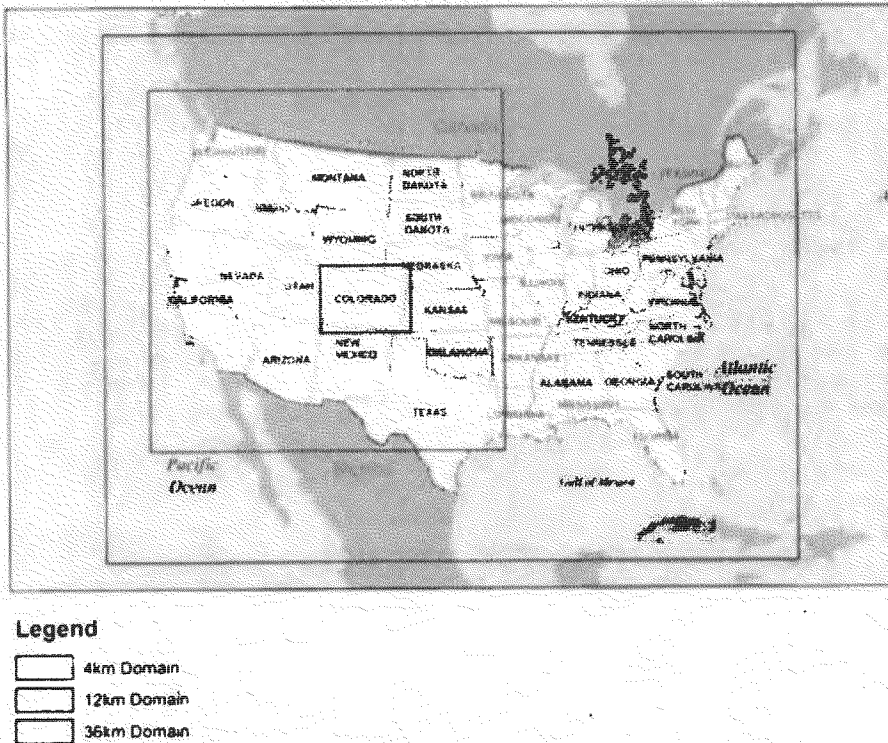


Figure 1. Denver 36 km CONUS, 12 km WESTUS and 4 km Colorado CAMx modeling domains.

Denver 2017 Local Source Analysis Ozone Source Apportionment Modeling

The Local Source Analysis ozone source apportionment modeling was conducted using the Denver 2017c CAMx modeling database for the Colorado 4 km domain and the May-August 2011 modeling period. Boundary Conditions (BCs) for the Colorado 4 km domain were based on the CAMx 2017c 36/12 km CONUS/WESTUS simulation. The Colorado 4 km modeling domain is shown in Figure 2. The Anthropogenic Precursor Culpability Assessment (APCA) version of the CAMx Ozone Source Apportionment Technology (OSAT) was used. CAMx version v6.3 (released April 2016) was used in the Denver ozone SA modeling that has several updates to CAMx v6.1 (released April 2014) used in the WAQS modeling. One important update of CAMx v6.3 is the new OSAT/APCA source apportionment algorithms that track reactive nitrogen and odd oxygen through the chemical species; more details on the differences on the OSAT/APCA formulations are given in Section 7.1 of the CAMx v6.3 user's guide (http://www.camx.com/files/camxusersguide_v6-30.pdf).

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Denver Metro/North Front Range 2017 Ozone Source Apportionment Modeling

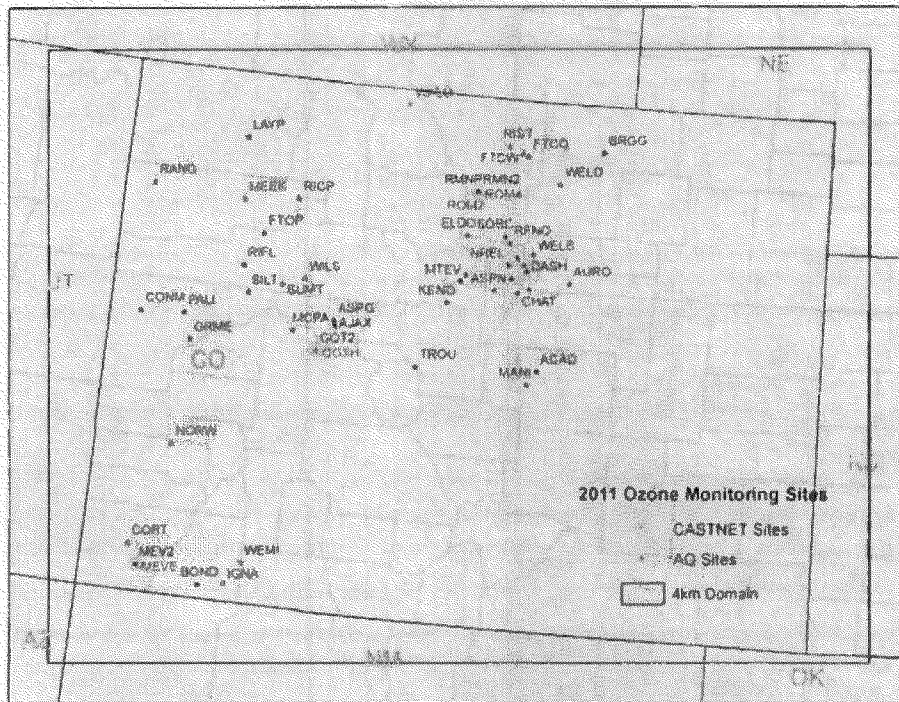


Figure 2. Denver 4 km Colorado modeling domain with ozone monitors that were operating during some portion of 2011.

Local Source Analysis Source Apportionment Groups

The Denver 2017 Local Source Analysis source apportionment modeling was configured to obtain ozone contributions from 4 Source Regions and 7 Source Categories. Separate ozone contributions were obtained for each Source Group that were defined as the intersection between the Source Regions and Source Categories. The Denver 2017 Local Source Analysis ozone source apportionment modeling used the following 4 Source Regions and 7 Source Categories;

Source Regions (Figure 3) (4)

- 9 counties that are included in the DMA/NFR NAA (see Figure 4)²;
- Western Colorado;
- Eastern Colorado; and
- Slivers of Surrounding States

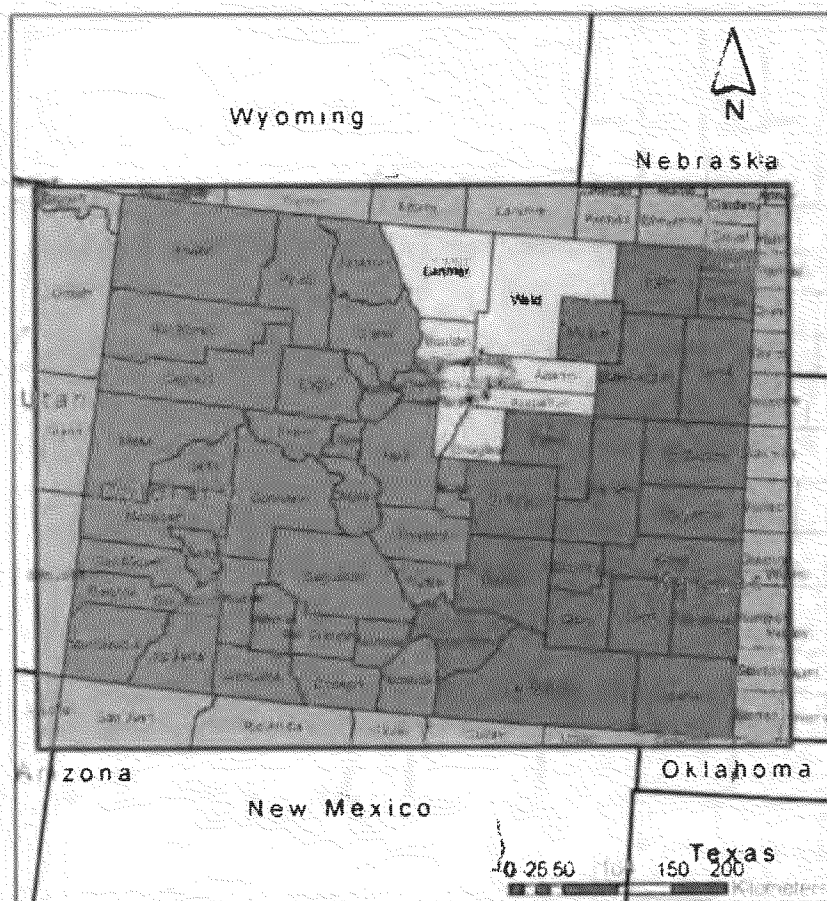
Source Categories (7)

- Natural Emissions (Biogenic, All Fires and Lightning NO_x)
- Oil and Gas Emissions:
- On-Road Mobile;
- Non-Road Mobile;
- EGU Point;
- Non-EGU Point; and
- Remainder Anthropogenic.

With 4 Source Regions and 7 Source Categories, and the need to always include initial concentrations (IC) and Boundary Conditions (BCs) as their own separate Source Groups, that results in a total of 30 Source Groups for which separate ozone source contributions were obtained. The Western and Eastern Colorado Source Regions were defined as west and east of the Denver Metro/NFR NAA as shown in Figure 3. The use of separate Western and Eastern Colorado Source Regions will allow a better identification of the contributing sources. For example, the analysis separates the contributions from oil and gas emissions from the Denver-Julesburg Basin (east) versus the Piceance Basin (west). The CAMx 2017c 4 km Local Analysis Source Apportionment was conducted for May 1 through August 31 period using the 2011c 4 km WRF meteorology and 2017c base year emission inventory. Figure 4 displays the Denver Metro/NFR ozone NAA with locations of ozone monitoring sites where the results were analyzed.

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Denver Metro/North Front Range 2017 Ozone Source Apportionment Modeling



Legend






-  Denver MSA (srcmap# = 1)
-  Eastern Colorado (srcmap# = 2)
-  Western Colorado (srcmap# = 3)
-  Other (srcmap# = 4)
-  Denver 4km Domain

Figure 3. Denver Local Source Analysis Source Regions.

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Denver Metro/North Front Range 2017 Ozone Source Apportionment Modeling

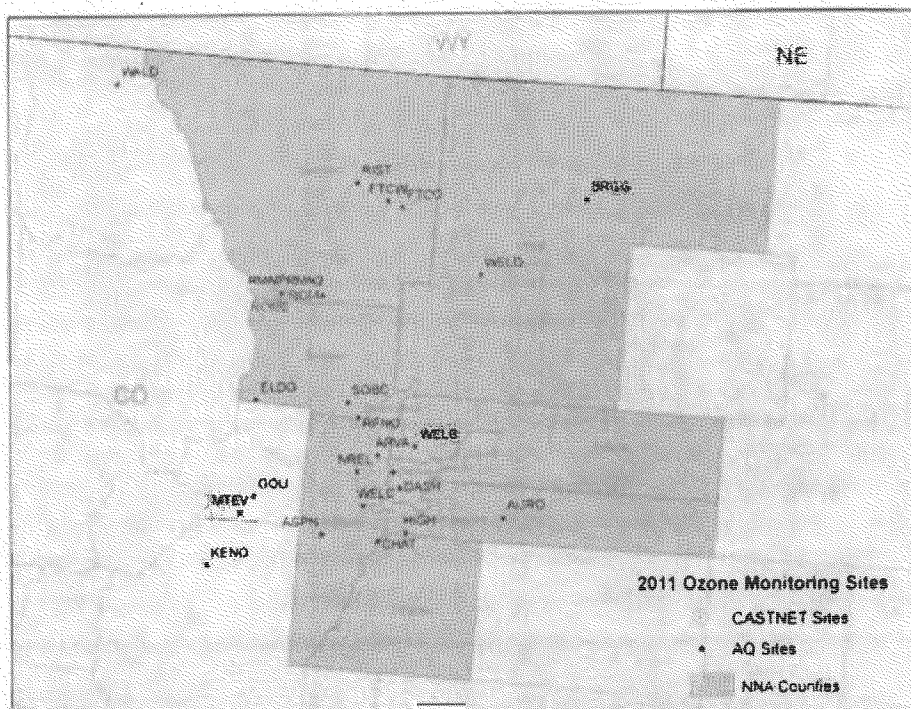


Figure 4. Nine county Denver Metro/NFR ozone NAA and locations of ozone monitoring sites operating in 2011 (whole counties depicted, actual NAA excludes the northern portions of Larimer and Weld Counties).

Local Source Analysis Ozone Source Apportionment Modeling Results

The CAMx 2017c 4 km Local Source Analysis ozone source apportionment modeling results were summarized in a PowerPoint Presentation (PPT (/wiki/pages/new?title=enter%20url%20or%20page%20name)). The ozone contributions of each Source Group to the maximum daily 8-hour average (MDA8) ozone concentrations at each monitoring site within the Denver Metro/NFR NAA and vicinity for each day of the modeling period were extracted and loaded into a web-based source apportionment visualization tool (SA Vis Tool) that can be accessed here: Local Source Analysis SA Vis Tool (http://vibe.cira.colostate.edu/WAQS_SA_CO)

The SA Vis Tool generates pie charts of 2017 ozone contributions by Source Region, Source Category or both (i.e., Source Groups) for monitoring sites within the Colorado 4 km modeling domain. The use of the SA Vis Tool involves the following:

- Selection of whether ozone SA visualization is for monitors from the AQS or CASTNet monitoring networks.
- Selection of the monitor where data is requested. This request can be made by selecting the monitor from drop down menus for State, County and Site or by using the map and selecting the monitor location.
- Select the day where results are desired. The day can be selected from a top five ozone day list for that monitor, from a drop down menu of ranked ozone days from high to low during the May-Sep modeling period or from a calendar. Note that multiple days can also be selected and the SA Tool will visualize the average contribution across those days.
- The SA Vis Tool will then visualize the modeled 2017 MDA8 ozone value for the selected monitoring site and day:
 - The top bar in the plot will list the modeled 2017 MDA8 ozone for the selected site/day(s), the amount the ozone is due to BCs around the 4 km Colorado domain (BC-4km) and the amount of the rest of the ozone (Non-BC); o Initially, the upper pie chart will be the Non-BC ozone contributions by Source Regions;
 - Initially, the lower pie chart will be the Non-BC ozone contributions by Source Categories;
 - Next to the lower pie chart will be a 10-day time series centered on the day in question that shows total MDA8 ozone and ozone due to BC-4km;
 - The monitoring site or day can be changed using drop down menus in the top left. The day can also be changed by clicking on the MDA8 ozone for a new day in the time series chart.
 - The Region/Category pie charts can be switched.
 - Clicking on one of the pie slices in the top pie chart provides more information in the bottom pie chart about that slice.

Figure 5 displays an example from the Local Source Analysis SA Vis Tool for the Chatfield monitoring site in Douglas County, Colorado based on August 26, 2011 meteorology. The total modeled 2017 MDA8 ozone is 74.2 of which 56.2 ppb (76%) is due to the BC-4km and the remaining 18.0 ppb (24%) non-BC portion is due to emissions in the Colorado 4 km domain. The pie charts show the contributions from the non-BC portion of the ozone with the percent numbers with the pie slices displaying the percent of total ozone (i.e., with the BC-4km contribution). For Figure 5, ozone from the Denver Metro/NFR NAA contributes 20.3% of the total ozone so since the non-BC portion of the ozone is 24% the NAA pie slice takes up 84% of the non-BC pie chart. In the lower Source Category pie chart the slice size is the fraction of the non-BC portion while the percent contributions are the contribution to the total ozone. The key to the definitions of the Local Source ozone SA modeling Source Contributions are as follows:

- NAT = Natural Emissions (Biogenic, Lightning NOx and Fires)
- OG = Oil and Gas Emissions
- OR = On-Road Mobile Source Emissions

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- NR = Non-Road Mobile Source Emissions
- EGU = Electrical Generating Units Point Source Emissions
- nEGU = Non-EGU Point Source Emissions
- REM = Remainder Anthropogenic Emissions (Area Sources)

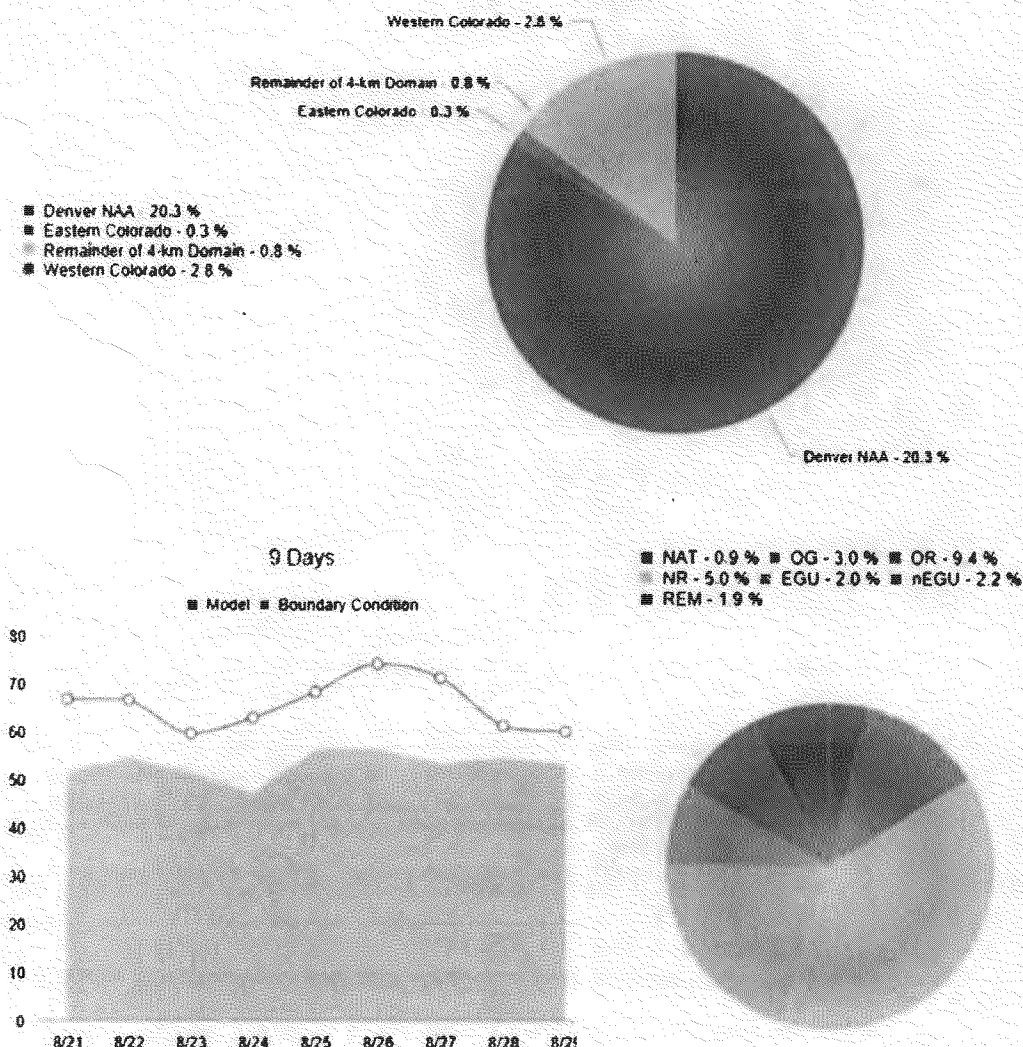


Figure 5. Example Local Source SA Vis Tool display for Chatfield (Douglas County, Colorado) on August 26, 2016 that has total modeled 2017 MDA8 ozone of 74.2 with 58.2 ppb due to BC-4km and 16.0 ppb due to non-BC (Colorado sources), pie chart slice sizes are contributions to non-BC ozone and percentages are contributions to total MDA8 ozone.

Transport Analysis Ozone Source Apportionment Modeling

The Denver 2017 ozone source apportionment Transport Analysis ran the CAMx v6.3 APCA ozone source apportionment tool using a fully linked two-way nested 36/12 km 2017c modeling platform (see Figure 1). The ozone Transport Analysis was used to obtain the contributions of anthropogenic emissions from each western state and the portions of Mexico and Canada within the 36 km CONUS domain (Figure 1) to ozone concentrations in the Denver Metro/NFR NAA and other locations in the western U.S. The ozone Transport Analysis also obtained the ozone contributions due to natural emissions within the CONUS domain as well as the Boundary Conditions (BCs) around the 36 km CONUS domain (from the MOZART GCM); the BC contributions include ozone influences from international sources, global natural sources and stratospheric ozone.

Transport Analysis Source Apportionment Groups The ozone Transport Analysis used the following Source Region and Category definitions:

Source Regions (21)

- 17 Western States (see Figure 6);
- Eastern US;
- Mexico (Mex);
- Canada (Can); and
- Offshore Shipping (OSS) that also included offshore O&G development.

Source Categories (2)

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- Natural Emissions (Biogenic, All Fires and Lighting NOX), and
- Anthropogenic Emissions.

ICBCs (6)

- IC;
- East BC;
- West BC;
- North BC;
- South BC; and
- Top BC.

With 21 Source Regions, times 2 Source Categories, plus 6 stratifications of ICBC, that results in separate ozone source apportionment contributions for 48 Source Groups.

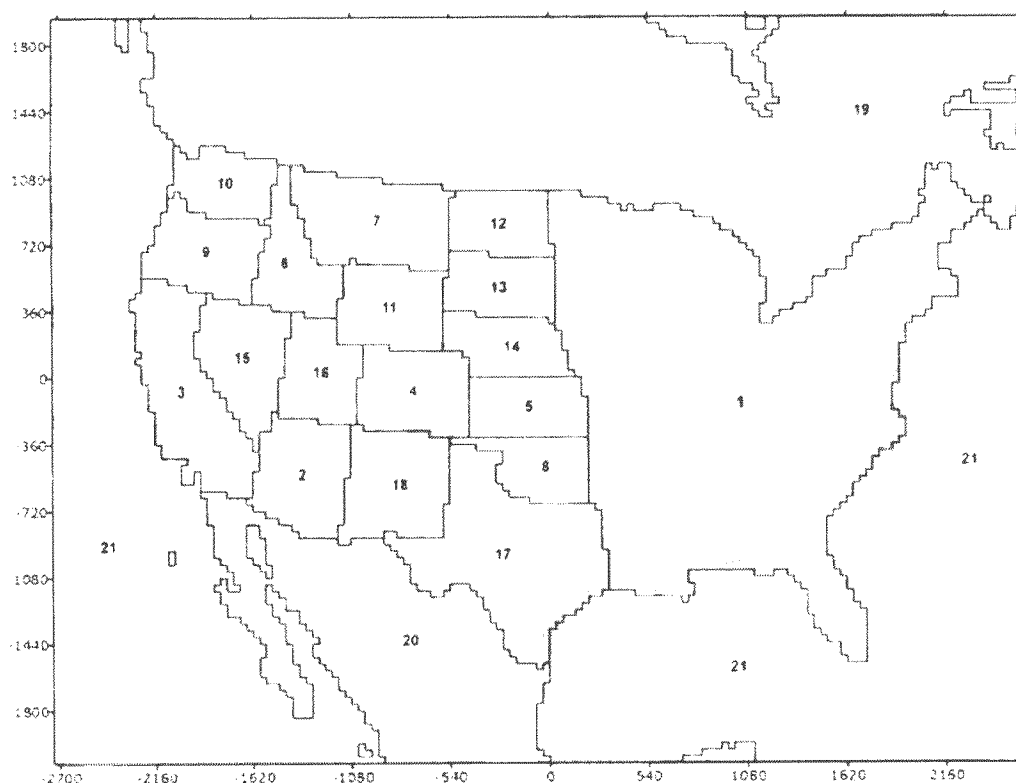


Figure 6. Source Regions used in the ozone Transport Analysis CAMx 2017 ozone source apportionment simulation with separate contributions due to anthropogenic emissions from 17 western states, EUSA, Canada, Mexico and OSS.

Transport Analysis Ozone Source Apportionment Results

The CAMx 2017 36/12 km Transport Analysis ozone source apportionment modeling results were summarized in a PowerPoint Presentation (PPT (<http://wiki.cira.colostate.edu/wiki/wiki/9132/denver-metro-north-front-range-2017-ozone-source-apportionment-modeling>)). The results from the Transport Analysis SA simulation were post-processed to obtain the contributions of states anthropogenic emissions as well as other regions and natural emissions to 2017 MDA8 ozone concentrations at western U.S. monitoring sites. These contributions were loaded into the ozone SA Vis Tool for display as discussed above for the Local Source Analysis.

Transport Analysis SA Vis Tool (http://vibe.cira.colostate.edu/WAQS_SA_DENVER/)

Figure 7 displays example results from the Transport Analysis Vis SA Tool for the 2017 MDA8 ozone at the same site (Chatfield) and day (August 26, 2011) used in the Figure 5 example display from the Local Source Analysis SA Vis Tool. The total 2017 MDA8 ozone at Chatfield on August 26, 2016 from the Transport Analysis is 68.4 ppb, which is lower than seen in the Local Source Analysis (74.2 ppb), which is likely because of the higher resolution grid (4 km) used in the Local Source Analysis SA modeling than used in the Transport Analysis (12 km) SA modeling. Of the 68.4 ppb total 2017 MDA8 ozone, 39.6 ppb (58%) is from the CONUS BCs and 28.9 ppb (42%) is from the non-BC contributions (i.e., anthropogenic and natural emissions within the CONUS modeling domain). The upper pie chart slices correspond to the total contributions from all emissions (anthropogenic and natural) in each Source Region, with Colorado being the largest contributor on this day at Chatfield, followed by Mexico, New Mexico and Arizona suggesting regional transport from the south-southwest on this day. The Source Region labels using state names are descriptive, where Off-Shore Shipping refers emissions in the Pacific and Atlantic Oceans and the Gulf of Mexico also includes offshore O&G emissions. The two Source Categories are Natural (NAT) and Anthropogenic (ANT) emissions whose contributions are identified in the lower pie chart.

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Denver Metro/North Front Range 2017 Ozone Source Apportionment Modeling

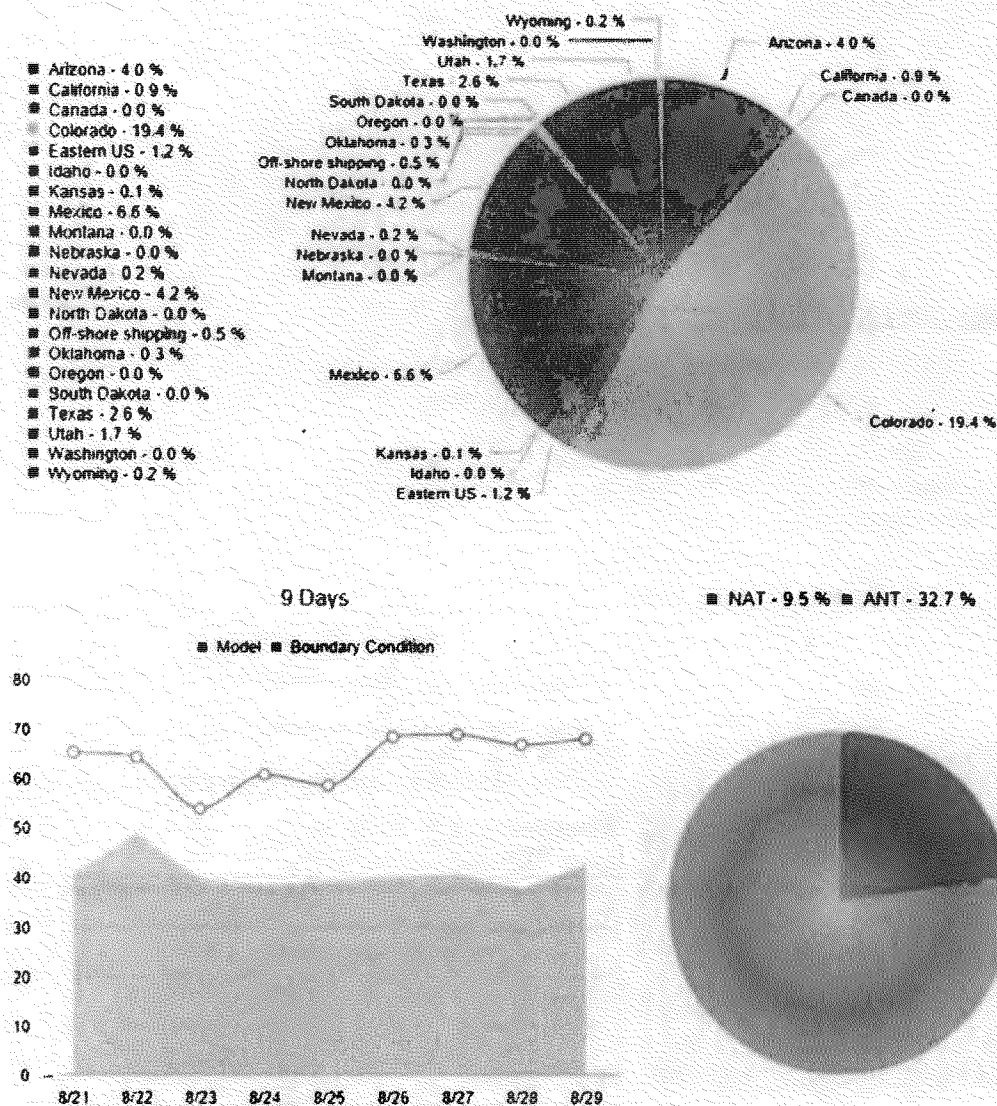


Figure 7. Example Transport Analysis SA Vis Tool display for Chatfield (Douglas County, Colorado) on August 26, 2016 that has total modeled 2017 MDA8 ozone of 68.4 with 39.6 ppb (58%) due to BC-CONUS and 28.9 ppb (42%) due to non-BC (CONUS sources), pie chart slice sizes are contributions to non-BC ozone and percentages are contributions to total MDA8 ozone.

¹APCA differs from the OSAT ozone source apportionment tool in that ozone is only allocated to Natural emissions when it is formed due to Natural NOx emissions interacting with Natural VOC emissions. For example, when ozone is formed due to the interaction of biogenic VOC with anthropogenic NOx emissions under VOC-limited ozone conditions, a condition where OSAT will assign the ozone formed to the biogenic VOC source category. APCA recognizes that biogenic VOC cannot be controlled so redirects the ozone formed to the anthropogenic NOx emissions category.

²The northern portions of Larimer and Weld Counties are not part of the Nonattainment Area, but segregating those areas the Source Region would have minimal impact on the Source Apportionment.

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Attachment C



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Submitted via email and www.regulations.gov

December 19, 2016

The Honorable Gina McCarthy
Administrator, U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Mail Code 1101A
Washington, DC 20460

**Comments of the Utility Air Regulatory Group on the
Proposed Rule, “Approval and Disapproval and Promulgation of Air Quality
Implementation Plans; Interstate Transport for Wyoming,”
81 Fed. Reg. 81712 (Nov. 18, 2016), EPA-R08-OAR-2016-0521**

Dear Administrator McCarthy:

On November 18, 2016, the United States Environmental Protection Agency (“EPA”) published a proposed rule entitled “Approval and Disapproval and Promulgation of Air Quality Implementation Plans; Interstate Transport for Wyoming,” 81 Fed. Reg. 81712. EPA proposes partial approval and partial disapproval of a Wyoming state implementation plan (“SIP”) submittal addressing Clean Air Act (“CAA”) infrastructure SIP requirements with respect to interstate transport for the 2008 ozone national ambient air quality standard (“NAAQS”) of 75 parts per billion.¹ The following comments on EPA’s proposed rule are

¹ These comments specifically address EPA’s proposed actions with respect to Wyoming’s SIP submittal for interstate transport requirements for the 2008 ozone NAAQS under “prong 1” and “prong 2” of section 110(a)(2)(D)(i) of the CAA (*i.e.*, the “significant contribution” and “interference with maintenance” clauses of that provision). EPA’s proposed rule also proposes approval of certain other Wyoming infrastructure SIP submittals and disapproval of certain other such submittals. The fact that these comments do not specifically address proposed actions to disapprove other SIP submittals, including EPA’s proposed disapproval of visibility-related interstate transport SIP submittals under “prong 4” of section 110(a)(2)(D)(i), should not in any way be construed as expressing or implying support for those proposed actions.



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respectfully submitted on behalf of the Utility Air Regulatory Group (“UARG”).²

With respect to prongs 1 and 2, the proposed rule is based—apparently entirely—on information from modeling analyses that EPA conducted for its Cross-State Air Pollution Rule (CSAPR) Update rulemaking, 81 Fed. Reg. 74504 (Oct. 26, 2016). *See* 81 Fed. Reg. at 81714-16. In the proposed rule, EPA notes that in the CSAPR Update rulemaking, EPA concluded that

[a]s to western states, . . . there may be geographically specific factors to consider in evaluating interstate transport, and given the near-term 2017 implementation timeframe, the EPA focused the final CSAPR Update on eastern states. *See* CSAPR Update at 81 FR 74523. Consistent with our statements in the CSAPR Update, the EPA intends to address western states, like Wyoming, on a case-by-case basis.

Id. at 81715. Based on its CSAPR Update rulemaking information, EPA proposes to approve the Wyoming prong 1 SIP submittal for the 2008 ozone NAAQS. EPA says that its “modeling indicates that Wyoming does not contribute above the one percent threshold to any nonattainment receptors.” *Id.* Although UARG does not believe EPA’s one-percent-of-NAAQS contribution threshold should be determinative in this matter—*i.e.*, UARG believes it is *not* the case that a state may properly be subjected to interstate-transport emission reduction obligations on the basis that the state contributes more than one percent of the NAAQS to air quality at a downwind location—UARG agrees that EPA should find that Wyoming does not contribute significantly to nonattainment of the NAAQS in any other state and therefore should approve this element of Wyoming’s SIP submittal.

EPA proposes, however, to conclude that Wyoming’s emissions contribute, in an amount above the one percent threshold, to ozone concentrations at one “maintenance-only” monitor, *i.e.*, Douglas County, Colorado, monitor ID number 80350004, in the Denver area. *Id.* On this basis, EPA concludes that “the State’s emissions require further evaluation, taking into account both air quality and cost considerations, to determine what, if any, emissions reductions might be necessary to address the State’s emission reduction obligation pursuant to 110(a)(2)(D)(i)(I)” prong 2. *Id.*

In its proposed rule, EPA properly refrains from “determining that one percent of the NAAQS is always an appropriate threshold for identifying interstate transport linkages for all

² UARG is a voluntary group of electric generating companies and national trade associations. The vast majority of electric energy in the United States is generated by individual members of UARG or other members of UARG’s trade association members. UARG participates on behalf of its members in CAA proceedings that affect the interests of electric generators.



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states in the West.” *Id.* Indeed, for reasons UARG explained in its comments on the proposed version of the CSAPR Update rule, EPA should not use the one-percent level as a contribution threshold in its section 110(a)(2)(D)(i)(I) analyses—and certainly should not use it (or any other specific threshold) as a bright-line test that results in subjecting states to interstate-transport emission reduction obligations. *See* UARG Comments on Proposed CSAPR Update Rule at 22-26 (Feb. 1, 2016), EPA-HQ-OAR-2015-0500-0253. EPA also should not establish such obligations for states based on a mistaken interpretation of the CAA’s provisions with respect to what EPA here calls a downwind “maintenance” receptor. *See id.* at 33-37.

Although it purports not to apply mechanically a one-percent-of-NAAQS threshold in this proceeding, EPA nonetheless faults Wyoming because, according to EPA, the state’s “SIP submittal neither identified nor included any ozone or ozone precursor emission reduction measures that the EPA could evaluate to determine whether the state has fully addressed . . . transport impacts.” 81 Fed. Reg. at 81715. On this basis, EPA states that it “cannot conclude that Wyoming’s SIP contains sufficient provisions to prohibit emissions that will interfere with maintenance of the 2008 ozone NAAQS in the Denver, Colorado area.” *Id.*

It appears, however, that EPA is unreasonably refusing to allow Wyoming an adequate opportunity to address these matters. In the present rulemaking, the Air Quality Division of the Wyoming Department of Environmental Quality submitted a letter to EPA requesting an extension of the December 19, 2016 deadline for submission of comments because the existing comment period “is insufficient given the technical analysis required to formulate an adequate response to the Proposed Rule.” EPA-R08-OAR-2016-0521-0012 at 1 (Nov. 23, 2016) (“Wyoming Letter”). The letter noted that “[t]he Division will need to devote significant time and energy reviewing EPA’s basis for the approval and disapproval” of the SIP submittals and that EPA’s proposed disapproval of the prong 2 SIP submittal for the 2008 ozone NAAQS “will require significantly more analysis than other parts of the Proposed Rule.” Noting that the SIP submittal at issue was received by EPA on February 6, 2014, *see* 81 Fed. Reg. at 81713—and that EPA therefore had had more than two years and nine months to review, analyze, and act on the SIP, Wyoming said it “believes it is reasonable to allow at least an additional ninety (90) days to review EPA’s Proposed Rule involving multiple Wyoming State Plans” and to have “the opportunity to provide additional information in support” of its ozone transport SIP submittal. Wyoming Letter at 1. Wyoming emphasized that it “remains committed to working with EPA, but is concerned that *EPA has not yet worked with western states or western regional planning organizations on region-appropriate analysis* for interstate transport.” *Id.* (emphasis added).

UARG shares the concern expressed by Wyoming and believes the state’s request is eminently reasonable and should be granted. EPA, however, denied Wyoming’s request in a letter dated December 6, 2016. Without in any way disputing Wyoming’s statement that the



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state needs additional time to develop and provide relevant information—and without disputing that, as Wyoming’s letter explained, it would be reasonable to provide that additional time—EPA asserted that it was forced to deny any extension of the public comment period on the grounds that attorneys for Sierra Club “will not agree” to an extension. EPA-R08-OAR-2016-0521-0013. Indeed, Sierra Club’s refusal to allow more time was the *only* reason EPA cited for denying the state’s reasonable request.

In describing Sierra Club’s veto of any extension of the public comment period, EPA stated:

A federal court currently has pending before it a motion to enter a partial consent decree addressing deadlines for numerous SIP submissions nationwide, including this one. *Opposing counsel in that case* [i.e., Sierra Club’s counsel] has already granted EPA an extension of the negotiated deadline for this SIP submission until January 17, 2017, but *will not agree to the further extension* sought by Wyoming. Accordingly, *we cannot grant your request to extend the comment period.*

Id. (emphases added). It appears that the case EPA referred to is *Sierra Club v. McCarthy*, Case No. 3:15-cv-04328-JD (N.D. Cal.), in which Sierra Club and EPA jointly submitted a motion on October 15, 2016, asking the U.S. District Court for the Northern District of California in San Francisco to enter a proposed consent decree, negotiated between Sierra Club and EPA, that would set a deadline of January 17, 2017, for EPA to sign a notice of final rulemaking to approve or disapprove the Wyoming SIP submittals. *Sierra Club v. McCarthy*, Joint Motion To Enter Partial Consent Decree (Oct. 15, 2015) (Document 57); *Sierra Club v. McCarthy*, [Proposed] Partial Consent Decree at ¶ 1.a. (Oct. 15, 2015) (Document 57-1) (“Proposed Consent Decree”).

It is improper for EPA to rely on this proposed consent decree to refuse to allow the public and stakeholders, including the Department of Environmental Quality of the directly affected state, any additional time to provide information to EPA in this rulemaking. First, the district court’s docket in this case confirms that the proposed consent decree is only that—a *proposed* decree, which the court has not entered. Equally important, EPA fails to explain why—despite the fact that it has not disputed the need for additional time for Wyoming to develop and submit relevant information—EPA will not either (i) take action to modify the proposed consent decree or, in the absence of a modification of the proposed consent decree, (ii) file a motion with the district court to modify the (still-not-binding) January 17, 2017 deadline for good cause, as the proposed consent decree expressly authorizes EPA to do, *see* Proposed Consent Decree at ¶ 5. In all events, it is improper for EPA to deny an affected state’s opportunity to submit meaningful comments and to prepare relevant technical and other information for EPA’s consideration—information that EPA itself characterizes as



The Honorable Gina McCarthy
 December 19, 2016
 Page 5

appropriate for assessment of the issues at stake in the rulemaking, *see* 81 Fed. Reg. at 81715—on the sole basis that a single private group does “not agree.”

Particularly under these circumstances, EPA should not make final its proposed disapproval of Wyoming’s prong 2 SIP submittal for the 2008 ozone NAAQS. Instead, EPA should make final its proposed approval of SIP submittals, including the prong 1 submittal for the 2008 ozone NAAQS, and reopen the public comment period on the proposed SIP disapprovals for at least 90 days to allow Wyoming and other commenters time to provide any analyses and other information to EPA regarding the prong 2 SIP submittal and any proposed SIP disapproval actions. Furthermore, UARG urges EPA to respond favorably to Wyoming’s request that EPA work collaboratively with the affected western states in this important matter. Moreover, in addressing this matter, EPA must take into account the numerous and important factors that affect consideration of any interstate transport issues in western states.³

UARG appreciates the opportunity to provide these comments. Please contact me if you would like to discuss UARG’s comments.

Sincerely,

Norman W. Fichthorn
 Counsel to the Utility Air Regulatory Group

³ *See, e.g.,* Comments of the Western Energy Supply and Transmission Associates on the Proposed Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, at 2-4, EPA Docket No. EPA-HQ-OAR-2015-0500-0360 (Feb. 1, 2016).



December 19, 2016

Adam Clark
Air Program
Environmental Protection Agency Region 8
Mail Code 8P-AR
1595 Wynkoop St.
Denver, CO 80202

**RE: Air Quality State Implementation Plans; Approvals and Promulgations; Wyoming;
Interstate Transport, Docket ID No. EPA-R08-OAR-2016-0521-0001**

Dear Mr. Clark:

Western Energy Alliance is writing to express concern with EPA's proposed action on the State of Wyoming's State Implementation Plan (SIP) for ozone interstate transport. EPA's proposed action does not align with the weight of evidence and inappropriately relies on flawed modeling and methodologies. In addition to the comments submitted here, we fully support and endorse the State of Wyoming's comments on this proposed action.

Western Energy Alliance represents over 300 companies engaged in all aspects of environmentally responsible exploration and production of oil and natural gas in the West. Alliance members are independents, the majority of which are small businesses with an average of fifteen employees.

We believe EPA's proposed decision to disapprove the Wyoming Department of Environmental Quality's (WDEQ) SIP runs contrary to long-standing agency practice of accepting a "weight of evidence" approach to evaluating whether an area has a meaningful impact on National Ambient Air Quality Standards (NAAQS) maintenance in downwind states. Instead of accepting WDEQ's well-reasoned approach, EPA relies on faulty modeling results stemming from the Cross-State Air Pollution Rule (CSAPR) Update for the 2008 ozone NAAQS. WDEQ raised concerns with the suitability of CSAPR modeling in its original comments, which EPA later dismissed based on insufficient supporting evidence from WDEQ. Since WDEQ's ozone transport SIP was developed in 2014 before the updated CSAPR modeling guidance was developed, it is inappropriate for EPA to hold WDEQ analysis to standards that did not exist when the SIP was developed.

EPA has inappropriately put the onus on Wyoming to provide evidence to support or deny EPA's decisions on the suitability of CSAPR modeling. Moreover, it is unreasonable for EPA to expect an exhaustive technical analysis of the CSAPR modeling within a 30-day

1775 Sherman St., Ste 2700 Denver, CO 80203
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Wyoming Interstate Transport SIP

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comment window. The burden should rest on EPA to explain its justification for reversing long-standing policy about the CSAPR modeling deficiencies for the West.

The modeling results EPA points to in the disapproval decision are flawed because the CSAPR model has not been adapted to the unique concerns of western states. Primarily developed as a tool for eastern states in the ozone transport region, the CSAPR model fails to account for the topography, altitude, and climate of the western United States. Climate factors characteristic of the West include stratospheric intrusions, a long and severe wildfire season, abundant sunshine, and lack of summertime precipitation, all of which the CSAPR model fails to adequately consider. In the decision, EPA has provided no explanation or evidence for why it has determined modeling results need not account for these considerations. Additionally, EPA has failed to provide sufficient evidence that it reviewed and considered state exceptional events packages that may provide mitigating circumstances for NAAQS violations based on events such as wildfires or stratospheric intrusions of ozone. It is also unclear whether EPA has accounted for background ozone in CSAPR modeling and technical analysis. Background ozone in the western United State can contribute as much as 60 parts per billion (ppb) or more, which is critically important for NAAQS attainment and maintenance.¹

Instead, EPA points to supposed shortcomings in WDEQ's analysis, including failure to contemplate contributions from other nonattainment areas in Utah and Colorado. As EPA is likely aware, the designated nonattainment area along Utah's Wasatch Front is 46 miles southwest of the westernmost corner of Wyoming, and is separated by the prominent Wasatch mountain range, which rise nearly 8,000 feet above the valley floor. The prevailing wind direction in Salt Lake City year-round is south or southeast, meaning it is highly unlikely that Wyoming is meaningfully contributing to impaired air quality in the Wasatch Front nonattainment area. Furthermore, Utah's impaired air quality is often associated with atmospheric inversions within the Salt Lake valley that coincide with calm winds that trap pollutants within the valley. WDEQ has made an entirely justifiable assumption that the weight of evidence does not warrant any further evaluation of its contributions to Wasatch Front PM 2.5 or ozone exceedances. If EPA doubts the validity of WDEQ assessment on impacts in Utah, it should provide a well-reasoned explanation, which it has not done in this proposed action.

EPA's decision appears to point to other out-of-state regions that have recorded NAAQS violations but may not have been formally designated yet. One such area is likely Utah's Uinta Basin, which is undergoing the nonattainment designation process. However, ozone exceedances in the Uinta Basin, as has been documented through extensive scientific study, are associated with light winds, atmospheric inversions, and local snow cover.² The Uinta Mountains to the north provide a physical barrier that helps form the inversion

¹ Estimating North American Background Ozone in U.S. Surface Air with Two Independent Global Models: Variability, Uncertainties, and Recommendations. Fiore et al. December 26, 2013.

² Final Report, 2014 Uinta Basin Ozone Study. III Stoeckenius et al. February 2015.

Wyoming Interstate Transport SIP

December 19, 2016

Page 3 of 3

conditions that produce ozone. As scientists have thoroughly demonstrated, the ozone exceedances are concentrated below 6,000 feet in elevation. After three years of study, scientists did not find ozone transport from Wyoming playing an influencing factor in the Uinta Basin. It appears that EPA may be expecting WDEQ to prove a negative by studying its impact on neighboring states.

Similarly, Colorado's ozone nonattainment challenges are affected by the northern Front Range's climate, geography, and local emissions sources. Wyoming's assessment that the year-round westerly prevailing wind direction makes it reasonable to infer that Cheyenne, a city located 100 miles north-northeast of Denver, is unlikely to be a driving factor behind ozone levels in the Denver Metro/North Front Range Ozone Nonattainment Area. By calling for further study based on its own flawed and incomplete modeling and analysis, EPA is putting an unreasonable burden on WDEQ. Prior to imposing any such burden, EPA should support that its own justifications based on CSAPR modeling and subsequent analysis meet the same high analytical standard it is requiring of the states.

We encourage EPA to accept the State of Wyoming's ozone transport SIP as proposed, which is based on a well-reasoned approach that relies on the weight of evidence. We are available to discuss this matter further with EPA.

Sincerely,



Kathleen M. Sgamma
President

WESTERN ENERGY ALLIANCE



December 19, 2016

Submitted electronically via: <http://www.regulations.gov>

Docket ID: EPA-R08-OAR-2016-0521

Administrator Gina McCarthy
U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Comment Submittal on the U.S. Environmental Protection Agency's "Approval and Disapproval and Promulgation of Air Quality Implementation Plans; Interstate Transport for Wyoming" (November 18, 2016)

Dear Administrator McCarthy:

Basin Electric Power Cooperative (**Basin Electric**) appreciates this opportunity to submit comments on U.S. Environmental Protection Agency's (**EPA**) proposed *Approval and Disapproval and Promulgation of Air Quality Implementation Plans; Interstate Transport for Wyoming* published in the November 18, 2016 Federal Register.

Basin Electric is a regional, consumer-owned, generation and transmission cooperative formed in 1961 to supply supplemental power to a consortium of rural electric distribution cooperatives. Basin Electric supplies 137 rural electric member cooperative systems with wholesale electric power who in turn serve approximately 2.9 million consumers in a nine-state area. Basin Electric's core business is generating and delivering electricity to wholesale customers, primarily our member systems. At the end-of-year 2015, Basin Electric's generation portfolio consisted of 5,594 megawatts (**MW**) of wholesale electric generating capacity, located in four western states. Four coal-fired electric generating stations comprise the largest proportion (56.4%) of Basin Electric's generation portfolio. The remainder of Basin Electric's generation fleet consists of natural gas (18.4%), wind (14.5%), hydroelectric (5.6%), oil (3.2%) nuclear (1.1%) and recovered energy (0.8%) generation facilities. Basin Electric has additional natural gas generation projects that will be commercially available by the end of 2016 that will bring an additional 202 MW of generation capacity.

Basin Electric submits these comments electronically to docket ID EPA-R08-OAR-2016-0521 as noticed in the federal register at 81 Fed. Reg. 81712 (November 18, 2016), per the instructions in EPA's proposed action.

EPA's proposed action involves portions of six submissions from the State of Wyoming that are intended to demonstrate that Wyoming's State Implementation Plan (**SIP**) meets certain interstate transport requirements of the Clean Air Act (Act or CAA). Basin Electric's comments are limited to only to the "certification of Wyoming's infrastructure SIP for the 2008 ozone NAAQS" that Wyoming DEQ submitted to EPA on February 6, 2014, and EPA's proposed

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decision to “disapprove the prong 2 portion of the February 6, 2014, 2008 ozone NAAQS infrastructure submittal.”¹

EPA’s disapproval of the prong 2 portion of the February 6, 2014, 2008 ozone NAAQS infrastructure submittal is premature and inappropriate for the reasons discussed in the comments below.

Instead of “disapprov[ing] the prong 2 portion of [Wyoming’s] February 6, 2014, 2008 ozone NAAQS infrastructure submittal,”² EPA and Wyoming should agree to allow Wyoming to re-submit the prong 2 portion of Wyoming’s February 6, 2014, 2008 ozone NAAQS infrastructure submittal after the following have occurred:

- The resolution of the litigation involving the appeal of EPA’s federal implementation plan (FIP) for Wyoming for Regional Haze involving nitrogen oxide (NO_x) emissions from BART-eligible sources³ and “reasonable progress” sources;⁴
- Wyoming is given a reasonable opportunity to evaluate the factors and analysis set forth at 81 Fed. Reg. at 81713-14, much of which was either unavailable or legally unclear at the time Wyoming submitted its “certification of Wyoming’s infrastructure SIP for the 2008 ozone NAAQS” to EPA on February 6, 2014;
- Wyoming is given an opportunity to evaluate the appropriateness of using the CSAPR model as a screening tool to determine the impacts of interstate transport of NO_x and whether those emissions “significantly contribute to nonattainment of the NAAQS” ozone levels in Colorado and other neighboring States.

1.0 Statement of Basin Electric’s Interest In this action by EPA.

Basin Electric is a not-for-profit wholesale electric power supply cooperative that generates power from a diverse mix of fuel sources, including coal, natural gas, oil, and wind. Basin Electric is one of a group of six regional, consumer-owned public power energy organizations, known as the Missouri Basin Power Project. The Missouri Basin Power Project built and owns the Laramie River Station (LRS) located near Wheatland, Wyoming. Basin Electric has a 42.27 percent ownership interest in LRS, which consists of three 570 MW net coal-fired electricity units. LRS began “early action” compliance with Wyoming’s SIP for Regional Haze by installing over-fire air to reduce NO_x emissions from LRS Unit 1 in 2009, LRS Unit 2 in 2010, and LRS Unit 3 in 2011, and by installing new state-of-the-art low-NO_x burners on LRS Unit 1 in 2012, LRS Unit 2 in 2013, and LRS Unit 3 in 2014.⁵

On January 30, 2014, EPA disapproved the NO_x portion of the Regional Haze SIP that Wyoming had submitted to EPA on January 12, 2011, and substituted its own FIP requiring additional BART controls for NO_x on all three LRS Units beyond what Wyoming’s BART NO_x

¹ 81 Fed. Reg. at 81716.

² 81 Fed. Reg. at 81716.

³ “BART” refers to “best available retrofit technology” as defined by the factors listed in CAA § 169A(g)(2), 42 U.S.C. § 7491(g)(2), and BART-eligible sources are the sources that are required to install BART at CAA § 169A(b)(2)(A), 42 U.S.C. § 7491(b)(2)(A).

⁴ The term “reasonable progress” is defined by the factors listed in CAA § 169A(g)(1), 42 U.S.C. § 7491(g)(1).

⁵ LRS had previously installed an earlier version of low-NO_x burners well over a decade before the Regional Haze requirements applied, which also resulted in a significant reduction of NO_x emissions at that time.

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SIP had required.⁶ Similar additional NOx controls were required under the FIP for many other Wyoming sources. The FIP was appealed by LRS and other Wyoming utilities to the 10th Circuit Court of Appeals shortly thereafter. During the appeal, LRS and EPA continue to negotiate in good faith a “better-than-BART” alternative that is more cost effective than EPA’s NOx FIP of LRS. That process has involved additional modeling and other issues that are still in the process of being resolved.

On February 6, 2014, six days after EPA issued the NOx FIP at 79 Fed. Reg. 5032 (January 30, 2014), Wyoming submitted the “certification of Wyoming’s infrastructure SIP for the 2008 ozone NAAQS” that is the subject of this proposed action by EPA.

2.0 Reasons in Support of why EPA and Wyoming should agree to allow Wyoming to re-submit the prong 2 portion of Wyoming’s February 6, 2014, 2008 ozone NAAQS infrastructure submittal before proceeding with this action.

2.1 NOx reductions for the Regional Haze Program in Wyoming are still being negotiated.

EPA states at 81 Fed. Reg. at 81714 that “WDEQ’s submission does not provide any technical analysis demonstrating that the SIP contains adequate provisions prohibiting emissions that will interfere with maintenance of the 2008 ozone NAAQS in any other state (prong 2).” This is unfair after-the-fact reasoning.

At the time of Wyoming’s 2008 ozone NAAQS infrastructure submittal on February 6, 2014, EPA’s FIP had just been released 6 days before. The relevant NOx reductions were still in the process of being implemented under the early-action installation of NOx controls that LRS and other utilities had agreed to as part of Wyoming’s Regional Haze NOx SIP. Those additional NOx FIP reductions are still under appeal before the 10th Circuit Court of Appeals, some of which are subject to confidential settlement negotiations between LRS and EPA.

Therefore, from February 2014 to now, doing a “technical analysis demonstrating that the SIP contains adequate provisions prohibiting emissions that will interfere with maintenance of the 2008 ozone NAAQS in any other state (prong 2)” makes no sense until the NOx emissions are more certain based on the outcome of the anticipated potential settlement for LRS and the resolution of the other parts of the appeal to the 10th Circuit Court of Appeals.

Thus, Basin Electric suggests that EPA and Wyoming enter into an agreement to allow Wyoming to re-examine and re-submit the prong 2 portion of Wyoming’s February 6, 2014, 2008 ozone NAAQS infrastructure submittal after the resolution of the appeal of EPA’s FIP, including any settlements.⁷

⁶ “Approval, Disapproval and Promulgation of Implementation Plans; State of Wyoming; Regional Haze State Implementation Plan; Federal Implementation Plan for Regional Haze,” 79 Fed. Reg. 5032 (January 30, 2014).

⁷ The term “reasonable progress” is defined by the factors listed in CAA § 169A(g)(1), 42 U.S.C. § 7491(g)(1).

Administrator Gina McCarthy
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2.2 Wyoming should be given a fair opportunity to evaluate EPA's CSAPR Update Modeling.

Wyoming should be given an opportunity to review the recently-finalized CSAPR Update modeling EPA uses to project more than a 1% impact at receptors in Douglas County, Colorado to determine whether it is an accurate and appropriate tool to use in Wyoming or the west.

On February 1, 2016, West Associates submitted public comment in the CSAPR Update for the 2008 Ozone NAAQS providing several concerns about the use of the CSAPR modeling for Western states. Basin Electric supports these concerns and has attached a copy of the West Associates letter for your review.

EPA's proposed disapproval of Wyoming's prong 2 provisions for ozone is based on the CSAPR update modeling that was released as a final rule on October 26, 2016. Wyoming has had little to no opportunity to assess the factors of this analysis, or understand their application in Wyoming. See "Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS," 81 Fed. Reg. 74504 (October 26, 2016). As EPA appropriately notes in this proposed rulemaking⁸ and in the CSAPR Update rule,⁹ the CSAPR modeling is conducted specifically for Eastern, not Western States. Also, in this proposed action, EPA notes that there are different factors affecting modeling and modeling results that should be considered in the Western States, some of which are "geographically specific,"¹⁰ such as broad expanses of public land, high altitude settings, international transport and elevated background ozone concentrations that can comprise a significant portion of ambient concentrations, especially on high ozone days in the Western United States.

It is unreasonable to disapprove the prong 2 provisions for the Wyoming interstate transport ozone SIP submitted nearly three years ago based on a recently finalized modeling analysis, without considering the circumstances or providing Wyoming an opportunity analyze the information and supplement the administrative record.

2.3 Wyoming should be given an opportunity to evaluate the appropriateness of using the CSAPR model as a screening tool to determine the impacts of interstate transport of NOx and whether those emissions "significantly contribute to nonattainment of the NAAQS" ozone levels in Colorado and other neighboring States before the disapproval is issued.

EPA recognizes in this proposed action that differences exist between Eastern and Western States where it says at 81 Fed. Reg. at 81715:

As to western states, the EPA noted in the CSAPR Update that there may be geographically specific factors to consider in evaluating interstate transport, and given the near-term 2017 implementation timeframe, the EPA focused the final CSAPR Update on eastern states. See CSAPR Update at 81 FR 74523. Consistent with our statements in the CSAPR Update, the EPA intends to address western states, like Wyoming, on a case-by-case basis.

⁸ 81 Fed. Reg. at 81715.

⁹ 81 Fed. Reg. at 74523.

¹⁰ 81 Fed. Reg. at 81715.

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The EPA's air quality modeling as updated for the final CSAPR Update projects that for the Western U.S. (outside of California), there are no nonattainment receptors and only three maintenance receptors located in the Denver, Colorado area. Wyoming emissions are projected to contribute above one percent of the NAAQS at one of these receptors (the "Douglas County maintenance receptor"; see Table 1, below). The modeling also shows that multiple upwind states would collectively contribute to the projected Douglas County maintenance receptor in Colorado. The EPA found that the contribution to ozone concentrations from all states upwind of the Douglas County maintenance receptor in Colorado is about 9.7 percent. [Footnote 8] Thus, the collective contribution of emissions from upwind states represents a large portion of the ozone concentrations at the projected Douglas County maintenance receptor in Colorado.

According to the CSAPR Update modeling, in addition to Colorado, 18 other "upwind" States contribute to the ozone levels at the Douglas County ambient air maintenance monitor. And by far (approximately half) of the ozone measured at the monitor is from the "Initial & Boundary" – also referred to as "background" – ozone levels. The contribution in parts per billion (ppb), from largest to smallest, from each identified contributor according to the modeling is: Initial & Boundary a/k/a background – 36.59; Colorado – 26.10; Biological – 4.35; Utah – 1.63; California – 1.18; Wyoming – 1.18; Fires – .56; Nebraska – .53; Iowa – .51; Nevada – .50; Arizona – .39; Canada & Mexico – .33; Texas – .32; Idaho – .24; Tribal – .23; Oklahoma – .14; New Mexico – .13; Oregon – .12; Offshore – .07; South Dakota – .05; North Dakota – .05; Washington – .04; Montana – .03; Missouri – .01; and Louisiana – .01.

EPA recently proposed to approve Nevada's SIP based on facts nearly identical facts to this proposed action. See 81 Fed. Reg. 87857, 87859 (December 6, 2016).

Either the Wyoming ozone transport SIP should be approved as it is proposed to be for Nevada, or EPA should allow Wyoming to re-examine and re-submit the prong 2 portion of Wyoming's February 6, 2014, 2008 ozone NAAQS infrastructure submittal before moving forward with this proposed action.

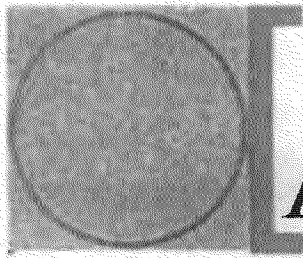
Thank you for your consideration of our comments. If you have any questions or require additional information, please contact Mark Foss or Mike Paul at (701) 223-0441.

Sincerely,

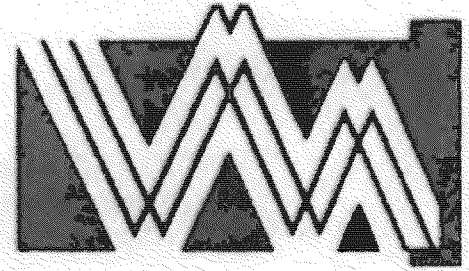


Mark D. Foss
Senior Vice President & General Counsel

mdf/ds
enclosure



**WEST
ASSOCIATES**



February 1, 2016

Submitted to Federal eRulemaking Portal - <http://www.regulations.gov> Docket ID No. EPA-HQ-OAR-2015-0500

U.S. Environmental Protection Agency
EPA Docket Center
Mail Code 28221T
Attention: Docket ID No. EPA-HQ-OAR-2015-0500,
1200 Pennsylvania Avenue, NW.
Washington, DC 20460

Re: Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS

To Whom It Concerns:

Western Energy Supply and Transmission Associates (WEST) appreciates this opportunity to comment on the United States Environmental Protection Agency's (EPA) proposed Cross-State Air Pollution Rule (CSAPR) Update for the 2008 Ozone NAAQS. WEST is a coalition of 11 cooperative, public and investor owned electric utilities¹ operating 40% of the fossil fueled generating capacity and producing 30% of the electricity in 11 western states, serving over 214,000 GWHs to almost 8.6 million customers.

The proposed rule requires 23 states in the eastern U.S. to reduce interstate emission transport that significantly contributes to nonattainment, or interferes with maintenance, of the 2008 ozone NAAQS by reducing their ozone season electric generating unit (EGU) NOX emissions in 2017 and future years. The EPA is proposing to update CSAPR to address interstate emission transport with respect to the 2008 ozone NAAQS of certain states' ozone-season nitrogen oxide (NOx) emissions budgets established by CSAPR. This proposal also updates the status of certain states' outstanding interstate ozone transport obligations with respect to the 1997 ozone NAAQS, for which CSAPR provided a partial remedy.²

This proposal does not apply to 11 contiguous states in the western U.S. However, EPA requests comment on whether it should. In framing the issue, EPA states the following:

¹ WEST members include Arizona Electric Power Cooperative, Arizona Public Service, Basin Electric Power

² 80 Fed. Reg. 75706 (December 3, 2015)

"CSAPR and previous federal transport rules, such as the NOX SIP Call and the Clean Air Interstate Rule (CAIR) ... addressed collective contributions of ozone pollution from states in the eastern U.S. These rules did not address contributions in the 11 western contiguous United States. There may be additional criteria to evaluate regarding collective contribution of transported air pollution in the West, such as those raised in EPA-state meetings to discuss approaches for determining how emissions in upwind states impact air quality in downwind states. Given that the near-term 2017 implementation timeframe constrains the opportunity to conduct evaluations of additional criteria, the EPA proposes to focus this rulemaking on eastern states. This focus would not relieve western states of obligations to address interstate transport under the Act. The EPA and western states, working together, would continue to evaluate interstate transport on a case-by-case basis. While the EPA proposes to focus this rulemaking on eastern states, we seek comment on whether to include western states in this rule."³

EPA expands on this later in the proposal stating, "The EPA would also continue to engage with western states on air quality modeling analyses and the implications of those analyses for interstate transport."⁴

WEST agrees with EPA that the western states should not be included in this rule, but that EPA and western states should continue working together to evaluate the complex nature of interstate transport in the West and to address concerns on a case-by-case basis where they exist. There are several reasons for our position:

First, notwithstanding EPA's assertion that its air quality modeling supporting this proposed rule includes data for the western states that indicate a relationship between upwind sources and downwind receptors, WEST believes this data is incomplete and otherwise insufficient for purposes of supporting the inclusion of western states in this rulemaking.

Second, historically, ozone nonattainment strategies have been focused on solving urban ozone exceedances that can be influenced by several local factors and transported air pollution from EGUs in neighboring states. Some western states have been addressing these kinds of challenge for several years. Yet, overall, ozone in western states does not present the persistent regional challenge with exceedances as it does in the east, and ozone presents different technical challenges. The Western States Air Resources Council (WESTAR) has commented on the challenges facing western states.

"There are significant uncertainties about the origin, magnitude, frequency, duration and geographic distribution of ozone in the west. Transported background ozone or the precursor pollutants that cause ozone may originate in another state, in Mexico, Canada, or Asia. It may be transported down from the stratosphere. It may be the

³ Ibid. at 75708 - 75709

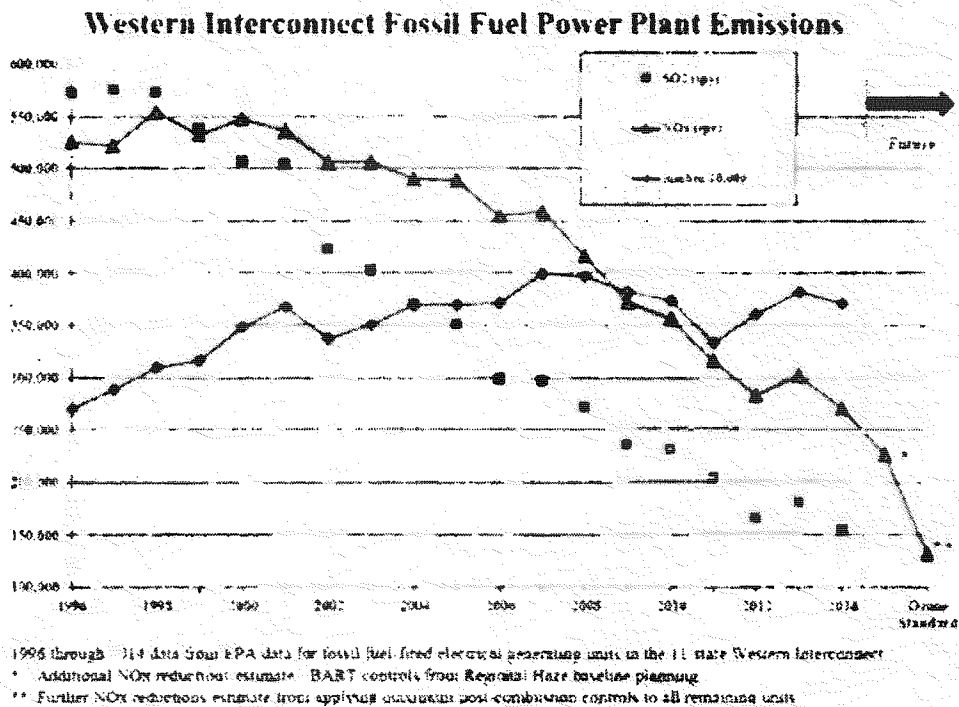
⁴ Ibid. at 75715 - 75716

product of wildfires. Characterizing multiple natural events (wildfire, stratospheric intrusions), occurring with varying intensities, and sometimes overlapping over space and time will require resources beyond the states' limited means. Implementing a more stringent ozone standard in the west will require a much better understanding of the role of background and transported ozone ..."⁵

Therefore, WEST agrees with EPA that western transport is complicated by a number of factors and that "there may be additional criteria to evaluate regarding transported air pollution in the West."

Third, an approach that relies on a collective, regional contribution from EGUs will not address the varied and complex circumstances affecting western ozone exceedances. Furthermore, as illustrated in Figure 1 below, NO_x emissions from power plant sources in the Western Interconnect have declined continuously and significantly since 2000, and are likely to further decline as regional haze and Clean Power Plan strategies are implemented.

Figure 1.⁶



As WESTAR has observed,

⁵ Letter from Western States Air Resources (WESTAR) Council to EPA (Docket ID No. OAR-HQ-OAR-2008-0699), March 16, 2015, at p. 4

⁶ Presentation by Tom Moore, "Western Regional Technical Analysis for Ozone Standard Planning, WESTAR," San Francisco (April 9, 2015) at slide 4

"Making the right choices about how to improve air quality in ozone nonattainment areas will depend on how well we understand the science, and our understanding of the science needs to improve. Given the absence of industrial development in numerous areas of the intermountain west, nonattainment area controls simply will not work to achieve attainment. Neither will interstate contribution reductions be sufficient in many areas to reduce ozone to levels below the proposed standard."

Finally, western regulators have identified several needs for improvements in modeling and analysis that will be required to address the varied and complex challenges facing western states with respect to urban and rural ozone exceedances, including but not limited to⁸:

- Ozone NAAQS planning—requires photochemical modeling for State Implementation Plan (SIP) attainment demonstrations for nonattainment areas.
- Ozone transport SIPs –photochemical source apportionment modeling can be used to quantify U.S. Ozone transport between states and jurisdictions.
- Identification of Ozone exceptional events caused by stratospheric intrusion and wildfires –requires observations & data analysis, supplemented with global/regional scale photochemical models and regression models.
- Identification of international transport of Ozone for §179B demonstrations: requires nested global and regional scale photochemical modeling to evaluate international transport of Ozone.
- Identification of §182 Rural Transport Areas –combination of data analysis and photochemical modeling.

Regional modeling of U.S. sources for air quality planning, to identify sources and assess controls for contributing sources, will be needed within the West.

WEST appreciates the fact that states remain obligated under the Clean Air Act to address interstate transport in their SIPs. However, WEST does not believe imposing a new regulatory framework in the west that was developed to address realities prevalent in the east is appropriate. Recent evidence strongly suggests that diverse on- and offshore contributors cause interstate transport in the west. If strategies are genuinely needed to address maintenance and limited nonattainment concerns due to interstate transport in the western states, these will need to be based on improved modeling and analysis.

Therefore, we urge EPA to defer inclusion of western states in this proposal, and to continue working with western states in developing improved analytical tools so that appropriate strategies can be developed for our unique circumstances.

Thank you for your consideration of WEST's comments on this matter. If you have any questions, please contact me at 701-557-5652 or by email at lw@westassociates.com.

Sincerely,

/s

Lyle Witham
President of the Board
WEST Associates

Page 1 of 1

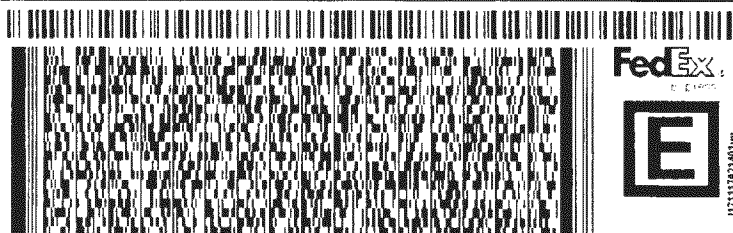
ORIGIN ID: CYSA (307) 777-3784
JANET STEPHENS
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200 W 17TH STREET

CHEYENNE, WY 82001
UNITED STATES US

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BILL SENDER

TO SCOTT PRUITT
US EPA HEADQUARTERS
WILLIAM JEFFERSON CLINTON BUILDING
1200 PENNSYLVANIA AVENUE N.W.
WASHINGTON DC 20460
(202) 564-4700 REF



TUE - 04 APR 3:00P
STANDARD OVERNIGHT

TRK# 7788 0964 8100
0201

XC RDVA 20460
DC-US IAD

